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ORIGINAL ARTICLES.

INHALATION OF OXYGEN IN ACUTE AFFECTIONS OF THE LUNGS.[1]

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INHALATIONS of oxygen are now very commonly resorted to in chest affections when the dyspnea becomes marked. The use of this agent was introduced into this country by the writer in 1860. By experiments on animals he had demonstrated that by enriching the atmosphere with additional oxygen, life could be maintained for long periods under conditions of tracheal obstruction that would be immediately fatal in common air.[2] In an essay published in 1870, he showed what was then generally disbelieved, that the inhalation of even pure oxygen is harmless,[3] and urged the addition of the gas to the inspired air in a variety of diseases in which it had been found useful by European practitioners. The introduction of compressed oxygen in cylinders for commercial purposes facilitated the use of the gas in sufficiently liberal quantities to test its real value as a therapeutic agent, and for the last twenty-five years it has occupied a prominent place in the treatment of respiratory affections and especially pneumonia.

The result of the use of oxygen in cases of respiratory difficulty will depend largely upon the exact mechanical conditions present. If the obstruction is partial, and is of such a nature that air, once having passed it, can then have unrestricted access to the alveoli, an almost normal respiratory relation can be reestablished by adding enough oxygen to the respired air to compensate for the diminished quantity of the latter. But if the obstruction is complete, or practically so, in any part of the lung, or if it extends into the air-cells themselves, the case is quite different. Such a condition involves a lessening of the respiratory surface, which means much more than a mere narrowing of the air-passages.

It is essential to remember that normal respiration requires that a normal amount of oxygen shall be brought into relation with a normal quantity of blood. Now we possess the means of remedying to a certain extent a deficiency of air, since we can make a reduced volume contain the full amount of oxygen, but we have no power to act in a corresponding way upon the blood, for it cannot be made to take up an excess of oxygen in one part of the lungs to compensate for a deficiency in another. Suppose, for instance, the lumen of the trachea should be diminished experimentally one-half, we could double the proportion of oxygen in the air and the respiratory demand would be satisfied. But suppose that instead of narrowing the trachea to one-half its transverse area we should cut off one-half the supply of blood to the lungs by clamping one of the pulmonary arteries, the resulting dyspnea now would not be relieved by any amount of oxygen added to the respired air, for the reason that the blood circulating in the other lung would refuse to absorb more than the usual proportion of the gas, and the process of aeration of the blood would be only half accomplished. We might vary the first experiment by leaving the trachea unobstructed but closing entirely one of the primary bronchi. This would cause about the same reduction of the quantity of air inhaled, but at the same time it would throw out of use one-half of the pulmonary capillaries. In this case, as in the last, the addition of oxygen would fail to give relief, and for a similar reason.

It is not strictly true that when a restricted supply of air is compensated for by the addition of oxygen, the normal respiratory conditions are reestablished. To be entirely satisfactory the respirations must have the normal amplitude. This is necessary to give the free play to the lungs which is required for a proper distribution both of the air and the blood to all parts of the pulmonary structure. But the trouble from this source is not urgent, and can very well be tolerated for a considerable time.

Applying these considerations to the conditions occurring in acute respiratory disease we find them amply sustained by clinical results. The dyspnea of membranous croup is at once relieved by oxygen if enough be given to compensate for the diminished supply of air. Once get the required amount of oxygen past the obstruction and the respiratory distress ceases. The same is measurably true in bronchitis.

[1] Read by title before the American Climatological Association, September 1, 1898.

[2] "Oxygen Gas as a Remedy in Disease." Prize Essay of the Alumni Association, College of Physicians and Surgeons, New York.

[3] Among other experiments a number of mice were confined under a bell-glass, into which flowed a constant stream of pure oxygen. In this way the products of respiration were removed as rapidly as formed, and the purity of the respired gas was maintained. The experiment was continued for ninety-six hours, during which the animals took their food, arranged their bedding, and behaved in every way as mice in confinement are accustomed to do. After the conclusion of the experiment they were kept for several days and remained apparently in perfect health.

In this affection the secretion is rarely in sufficient quantity to entirely obstruct even the smallest tubes, and a way is left open by which the oxygen can reach the alveoli. There it meets an adequate supply of blood and the process of hematosis goes on in a fairly normal manner. But in pneumonia the case is entirely different. Here the air cells become filled up with the exudate and access to the respiratory surface is barred. The situation is similar to that in the last experiment, and so much of the dyspnea as depends upon the consolidation will remain in spite of oxygen used ever so freely. This is not to say, however, that no good comes from its use in lobar pneumonia, as there is almost always a certain amount of bronchitis or edema present at the same time, which adds more or less to the respiratory embarrassment.

Its value in these diseases rests on a broader foundation than is immediately apparent. It is not alone that it tends to avert suffocation. Indeed, it is very seldom that a patient, with pneumonia, for example, dies directly from deprivation of oxygen. As a rule, before death from actual suffocation takes place the heart, and particularly the right heart, gives out, and the fatal result is from asystole. This exhaustion of the right heart is a gradual process, and is brought about by the increased muscular effort required to propel the blood through the affected lung. The pulmonary ischemia is made up of two factors, one of which is the obstruction of the vessels, and the other and a very important one, the sluggishness with which blood not duly aerated circulates even through unobstructed capillaries.

It is in the relief of this latter condition that oxygen is most valuable. The moment the arterialization of the blood is improved the circulation becomes easier and the labor of the right heart is lightened. It is a serious error, however, to defer the use of oxygen until the dyspnea has become urgent. By its timely employment the cardiac force can be conserved, and congestion of the unaffected lung territory is in a great measure prevented. But inasmuch as blood even under the most favorable conditions will not take up an excess of oxygen, if we delay too long, and suffer the access of air to become too much restricted, no addition of oxygen acting upon the limited quantity of blood circulating in the lungs will suffice to restore the balance and regain the ground which has been lost.

While the results obtained from oxygen in the croupous form of pneumonia may not be so favorable as in the bronchial, still it is capable of rendering valuable aid in a large proportion of cases. A common source of disappointment lies in reserving its use until a period when, for reasons already considered, its value is comparatively limited. Even in those cases it may serve to bridge over a time of special danger, but the best results are obtained when it is given more or less freely from the moment that it becomes clear that the case is one of more than moderate severity. Its good effects will be shown in lessened frequency of the pulse and respiration, a better color of the face and lips and fewer moist râles in the chest.[1]

In spasmodic asthma it would seem as if the conditions were such as to insure most satisfactory results from the use of oxygen, and in practice relief is generally obtained from it almost immediately. But there are cases in which it does very little good, if any. Repeatedly witnessing such paradoxical results has led me to ask myself whether there may not be a form of asthma in which the spasm includes the blood-vessels of the lung as well as the air-tubes. I cannot otherwise explain why cases apparently similar to others which yield at once to the gas should be entirely rebellious to its influence.

In using the compressed gas, it is allowed to escape from the cylinder through a wash-bottle, the valve being so adjusted that the gas bubbles gently through the water. From the wash-bottle the gas is carried to the patient's mouth through a flexible tube provided with a mouthpiece of glass or hard rubber. If the patient is in a condition to hold this in his mouth no more will be required. Otherwise, it must be held by an attendant in such a position that the escaping gas will be drawn into the lungs with the current of inspired air. A still better way, especially if the patient is comatose, is to pass a small, flexible catheter through one nostril into the nasopharynx, and to connect this with the wash-bottle. In this way very little of the gas is wasted. If it is desired to add any volatile substance to the gas inhaled, a solution containing it may be made to replace the water in the wash-bottle.

There is no advantage in a lavish use of the gas, as the blood will take up only a very limited amount. If it escapes too freely it adds to the sensation of breathlessness, as is the case when one faces a strong wind. Only pure oxygen should be employed. The addition of nitrous oxid with the idea that it is more soluble in the blood should be condemned, as the oxid is useless for the purpose of respiration, and interferes with the proper interchange of gases within the lungs.

In pneumonia the indication for a resort to oxygen is present as soon as the respirations exceed thirty-five per minute, and earlier than this if mucous râles develop outside of the area of consolidation, or

[1] For a full discussion of this point see an article by the writer in the *New York Medical Gazette*, December 18, 1870.

if the lips assume a dusky hue. Under these conditions it may be given continuously or during a prescribed number of minutes in each hour.

GASTRIC ULCER.

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UNDER the word ulcer must be included at least three types of gastric lesion. The type most closely analogous to ordinary external ulcers consists in the erosions found in acute toxic and traumatic gastritis. So-called hemorrhagic erosions, due to back-pressure of blood and most commonly found in cases of chronic gastritis dependent on hepatic sclerosis, do not belong to this type but are rather to be considered a form of the second type or as a separate class. The second type is the latent ulcer of the middle-aged and elderly, which usually gives no diagnostic symptoms and is discovered only at autopsy. The third type is the one which departs most of all from the general conception of the word, but is the one which is usually meant when no specification is made to the contrary.

Peptic, round or rodent ulcer has been ascribed to two conditions, hemorrhagic infarction and neurosis. The former theory is more satisfactory and tangible as a theory, but it is rendered improbable by the fact that persons who have gastric ulcer are seldom those in whom one would expect to find any of the pathologic states on which infarction depends and, *vice versa*, persons in whom serious circulatory conditions are in progress do not often exhibit signs of peptic ulcer. It is probable, however, that the second type, of latent ulcer, does occur more or less frequently from hemorrhagic infarction. The use of the word neurosis is always a confession of ignorance and many writers who have used it most learnedly have failed to explain why a nervous state should cause one part of the gastric wall to lose its vitality, and to be acted on by the gastric juice as if it were so much meat in the stomach. Perhaps it may be assumed that there is a local vasomotor spasm which temporarily shuts off nourishment from an area and allows its digestion. There is little dispute but that the actual formation of the ulcer depends on the digestion of a part of the gastric wall, however we may explain the lessening of the normal resistance to digestion.

As in the case of some forms of cancer it can be recognized quite clearly that the cause which determines the special location of the disease is largely traumatic or mechanical. Stoll and other Germans have shown that in men the pylorus and its immediate vicinity is the area of preference of gastric ulcer in sixty per cent. of all cases, while the lesser curvature is involved in forty per cent. of all cases occurring in women. The fact that no other part of the stomach wall shows any particular predilection in either sex and that there is so marked a sexual disparity plainly signifies that there is some physiologic underlying cause. It is explained that the pylorus bears the brunt of the irritation by food-particles and that it is also pressed upon by the liver at each descent of the diaphragm, in men, while in women the lateral constriction of corsets and waist-bands prevents the lesser curvature from getting out of the way of the descending diaphragm. On the other hand, it is an open question whether the bodies upon which the statistics were based represented a class of society in which corsets are much in vogue. This again brings up a still unsettled question as to whether there is any difference between the male and the female type of respiration, not directly explicable by differences in clothing. The writer would suggest that, possibly, the difference is due to the well-established fact that women are more liable than men to moderate dilatation and ptosis of the stomach, whether they wear corsets or not, and that a sagging stomach would escape the pressure of the diaphragm on its pyloric end.

Stoll's studies also seem to disprove the commonly accepted statement that the typical victim of gastric ulcer is a young, chlorotic, overworked woman. Allowing for the fewer persons living to an advanced age, as compared with the young, and for the fact that after the age of fifty, female mortality is lower than male, Stoll's statistics from several thousand observations indicate a greater predisposition on the part of the middle-aged and elderly and very little sexual difference. But it must be remembered that such statistics as these are based rather on the pathologic than the clinical conception of ulcer; that, in many instances, the ulcers are avowedly of the second or latent type and not suspected *ante-mortem*, and, if it were not for the carefulness of German observers in general and of those quoted in particular, one might question whether all these ulcers were really formed *ante-mortem* and whether they did not represent *post-mortem* softening, which has been described as a disease of the stomach within the period covered by the observations of Stoll and those from whom he quotes.

The present teaching points to a close causal relation between superacidity of the gastric juice and gastric ulcer. But there are obvious objections to making a diagnostic use of this relation, since a stomach in which the existence of an ulcer is suspected is the very one in which interference by the tube is most contraindicated. Moreover, there is

very little support for the idea that there is a constant superacidity in cases of ulcer, even limiting the use of the word *constant* to periods of the height of digestion. Stoll, in a personal letter, states that superacidity does not exist in more than fifty per cent. of cases of gastric ulcer, while the study of his report of about ninety cases gives the conclusion that only twenty-five per cent. were marked by superacidity, while an equal proportion showed a real deficiency of acid.

The diagnosis of the third class of gastric ulcer occasions no difficulty. Erosions may be assumed to be present in every case of corrosive poisoning, and if, in comparatively rare instances, the assumption happens to be wrong no harm is done. The diagnosis of the second class of ulcer is easy for the reason of its extreme difficulty. One must consider the possibility of latent ulcer in cases of dilatation and gastroptosis, of chronic gastric catarrh and its ultimate stage of anadenia, and particularly when hepatic sclerosis or heart disease causes back pressure in the venous radicles of the stomach, but it is almost always impossible to state whether an actual solution of superficial continuity exists or not, nor is it necessary to modify our treatment materially according to our verdict for or against the probability of such an occurrence.

It must be conceded that peptic ulcer may exist without marked hemorrhage, and that such cases are usually overlooked. Among the many symptoms of gastric ulcer of the first class that have been mentioned by clinicians, pain is the only one which is at all characteristic, and there is absolutely nothing except hemorrhage which is of diagnostic value either by its presence or absence. Thus the diagnosis of peptic ulcer is essentially a localization of the source of a hemorrhage, appearing at the mouth or anus, or both. Most medical students graduate with the idea that it is a comparatively easy matter to diagnose between hematemesis, hemoptysis, and local bleeding from the nose and throat; that only ignorance or carelessness can occasion error. In many instances considerable difficulty attends the localization of the hemorrhage. For example, a young man was seized suddenly with a copious hemorrhage from the mouth, with neither gagging nor coughing except after the blood had begun to flow, and while in apparently perfect health. He had one of the best developed and most muscular chests that I ever saw, was well nourished, and of good complexion except for the sudden pallor. There was no history of strain which might account for a pulmonary or other apoplexy. I examined him first for local causes of bleeding in the mouth, pharynx, and nose without success. Physical examination showed a good-sized cavity in the left lung, and the subsequent course of the disease confirmed the diagnosis of consumption previously undiscovered. The following case remains undecided:

On March 26, 1897, J. H. H., aged twenty-nine years, consulted me on account of gaseous dyspepsia, with constipation and cardiac irritability hardly amounting to palpitation. He gave a fairly typical history of malaria during the previous year cured by quinin without medical attendance. His domestic relations were unhappy, and he was working from twelve to fifteen hours daily, where he had to be constantly on the alert to entertain customers. He was smoking and drinking tea rather excessively, and was suffering from insomnia. The heart and liver were normal, the spleen was moderately enlarged, and the stomach was in a state of ptosis, reaching to one-fourth of an inch above the umbilical equator. I did not examine his lungs as there was nothing to call attention to them. The liability to gastric ulcer was considered on account of the depressed and excitable state of the patient, but hydrochloric acid was given on account of the evident fermentation and the lack of effervescence with soda at the height of digestion. It is not necessary to detail the treatment contemplated, as the patient became disgusted after four-days' treatment without cure and sought another physician. Two months later he had a violent hemorrhage and died in twenty minutes, before medical aid could be summoned. During this time he had coughed somewhat, and his physician had made a tentative diagnosis of tuberculosis with possible cavity, though the physical signs had been doubtful. An autopsy was not allowed. Careful questioning of his brother, who was with him at the time of death, elicited nothing definitely diagnostic as to the source of bleeding, but the blood was described as coming in large quantities and without symptoms of choking as would be expected if it had issued through the air passages.

Even if the diagnosis of hematemesis can be made, one must still choose from a number of conditions. If moderate, it may be due to erosions or previously latent ulcers, perhaps depending on hepatic sclerosis. The bleeding of a cancer, either of the stomach or esophagus, is usually gradual, and the blood becomes black before its appearance, and is not present in alarming quantities, but a cancer may ulcerate into a vessel and cause a flood of blood. Age is not a positively diagnostic factor. The writer has recently attended and witnessed the autopsy on a man aged thirty-two years who had a cancer of the cardia and esophagus. If we accept Stoll's statistics as applicable to peptic ulcer in the strict sense the period of greatest frequency is the same for both ulcer and cancer. Massive hemorrhages may occur from ruptured varices of the cardia and esophagus, usually due to hepatic sclerosis. A case probably of this nature was reported by the writer two or three years

ago and, at that time, about thirty-five cases were on record. The writer has had under treatment for seven years a woman who has had prolapsed uterus, hemorrhoids, cerebral apoplexy, frequent subcutaneous rupture of veins, and several small hemorrhages in which the blood has escaped through the mouth, the exact site of the bleeding being unknown. A general state of angiosclerosis seems to exist, the patient being of the class of "lady tipplers" who become alcoholic as a result of invalidism. The most remarkable source of hematemesis that the writer ever saw was reported nine years ago, the diagnosis having been made only at autopsy. A large ovarian cyst, the presence of which was obvious, had become adherent to the colon, rupture had occurred into the bowel below the ileocecal valve and blood filled the entire alimentary canal, the patient having had hematemesis and having passed tarry stools for a week before death. Duodenal ulcer is comparatively rare. A diagnostic differentiation has been proposed, according as the hemorrhage appears at the mouth or the anus, but the differentiation does not hold good either for or against either condition. Fortunately, the question is rather of scientific than of therapeutic interest.

Of late years the treatment of gastric ulcer has turned too much on the matter of acidity. The two following cases will illustrate the lack of connection, though it must be granted that superacidity is to be dreaded in all cases of ulcer:

Margaret X., aged twenty-three years, single, gave a distinct history of hematemesis the year previous and said that her physician had diagnosed gastric ulcer. Her present complaint was gastric fermentation with every symptom of subacidity, and the examination of the stomach contents at the height of digestion after a light test-meal showed absolute lack of hydrochloric acid by resorcin and sugar.

Mr. L., a young professional student, illustrated the opposite condition. He had no failure of digestive power; on the contrary, his appetite was increased. At the height of digestion, after most of his meals, he had suffered from pain in the epigastrium, which would be relieved by drinking water or eating again. This condition had existed for about a week to such a degree as to occasion much discomfort. Previously it had not been so noticeable. The writer's effervescence test showed marked acidity six hours after a hearty meal when the stomach should have been and appeared to be empty. A month later (the patient lived out of town and could not call as often as was desired) the same test was marked four and one-half hours after eating in spite of sedatives and restriction of chlorids. This patient, an unusually intelligent observer, noted the symptoms of superacidity for a period of five or six weeks with never more than two-days' freedom from local pain and often with the occurrence of pain after every meal, but he could find no indication of blood in the stools nor was there other evidence of the actual development of an ulcer. There was also entire freedom from the signs and symptoms of fermentation with excessive development of organic acids. The writer has never observed a case in which organic acids could be supposed to cause audible effervescence with soda.

The following typical case of gastric ulcer is reported in detail for the sake of emphasizing the treatment:

Miss M. P., American, seamstress, aged twenty-one years, was treated in the spring of 1896 for subacid dyspepsia, confirmed by analysis of the gastric contents and by repeated absence of the effervescence test, and made a good recovery. She gave a history of similar attacks during preceding springs. On January 15, 1897, she appeared at my office looking like a ghost, panting for breath and complaining of palpitation of the heart, which was beating 130 times a minute. She had taken a street-car to within a thousand feet of the office. Her history was that she had been perfectly well until two days before, when she became pale, weak, and dizzy, but persisted in working, and had rallied in strength. That day she had vomited something black and had passed a tarry stool. Morphin, ¼ of a grain, and atrophin, $\frac{1}{150}$ of a grain, were given by hypodermatic injection and after a brief rest the patient was taken home in a closed sleigh surrounded by heaters. After she had been put to bed 30 minims of fluid extract of ergot was administered hypodermatically, the alcohol being first driven off in an extemporized water-bath and the residue diluted with boiled water. She was directed to take nothing by the mouth until I saw her again. The next morning, feeling better, she ate a small piece of bacon. Half an hour later the soda test showed considerable effervescence. Her urine contained neither albumin nor sugar, but was loaded with indican, signifying that the bowels were filled with putrescent material, presumably blood. In such cases the indican test is of considerable diagnostic value. The day's routine included two doses of 15 minims of ergotole, two nutrient injections of 1 egg and 7 ounces of milk, and at night a morphin and atrophin tablet. Regarding the ergotole I would like to say that it is an excellent preparation but that the claim that it is less painful for hypodermatic use than other preparations of ergot has not been substantiated in my experience. The only preparation of ergot which does not occasion considerable discomfort is the so-called ergotin, of which the dosage seems to be a matter of guesswork.

Early in the morning of January 17th, four days after the beginning of symptoms of loss of blood, the patient vomited about ten ounces of liquid containing dark-red clots. Bits of ice had been allowed during the preceding twenty-four hours. Morphin, ¼ of a grain, and ergotole, 12 minims, were given hypodermatically in succession. At nine o'clock the patient vomited again, but there had

been no fresh bleeding of any consequence. At 11 o'clock the morning nutrient enema was given, preceded, as all such enemata must be, by a douche of plain water to clear the rectum. The stools brought away by the douches or passed spontaneously were at first tarry, becoming normal after a week. At 1 P. M. vomiting occurred again, with only a few small black specks of blood. Morphin and atropin were given by the mouth. At five o'clock the ergotole was repeated. At 7 P. M. the patient vomited seven ounces of black, watery stomach contents. This emesis was apparently provoked by the water enema preceding the evening nutrition.

During the next day the patient had about ¾ of a grain of morphin on account of nausea and 80 minims of ergotole. Fifteen grains of bismuth subcarbonate was given toward evening. In the evening vomiting occurred of dark fluid, apparently containing little masses of blood. Microscopically these proved to be bismuth (sulphid), although red and white blood-cells were also present. The stomach contents were acid by benzo-purpurin, the most sensitive of the anilin dyes, but did not react to resorcin and sugar. Starch and sugar were absent, as would be expected. Albumin, albumose, and peptone were each present in small amount, probably from digestion of the blood.

After this there was no further hemorrhage, the use of morphin was discontinued, and the ergotole was reduced to 15 or 30 minims daily. Beginning January 19th, 2½ drams of a ten-per-cent. mixture of bismuth hydrate was given four times daily. After January 21st, 15 minims of tincture of the chlorid of iron was added to each nutrient enema on account of the anemia. On January 23d the German method of applying flaxseed-meal poultices to the epigastrium was instituted. Hemic murmurs were heard for a few days, but had disappeared by January 26th. The pulse had varied between 85 and 100, and the temperature had not been above 100.5° F.

On January 28th, feeding by the stomach was resumed, bread and milk being first given, then oysters, meat, and eggs. In such cases easily digestible food should be given, but it must be "hearty"; that is, composed largely of proteids which will tax the gastric juice and leave no excess of acid and pepsin to digest the gastric wall. On January 30th the urine for twenty-four hours amounted to 24½ ounces, and was normal except for a moderate excess of indican and a small amount of urea, only 11.9, the estimated normal under the circumstances being about 18. On February 7th free uric acid was present. After that date the urine was once faintly alkalin, with precipitation of phosphates, and once traces of albumin and globulin were found.

On February 11th the patient was discharged from active treatment, but continued for some time under general hygienic measures, including, especially, gymnastics to increase the chest expansion and to correct a rotary-lateral curvature of the spine. Iron and arsenic were also given and a long rest was insisted upon. Fortunately, the patient was working rather from an independent spirit than from necessity.

In these cases the indications are first to check the hemorrhage, then to allow the ulcer to heal, and finally to restore the digestive and general tone. Local styptics do more harm than good, and the stomach must be kept in a state of almost absolute physiologic rest. Ice is used rather as a compromise with the demands of the patient than with the hope of controlling hemorrhage. Much of the nausea which threatens to cause a renewal of hemorrhage is doubtless due to the morphin given at the beginning, but its use is scarcely preventable, and, for once, one must resort to the plan of *similia similibus curantur*, and control the nausea for a few days with more morphin. Ergot at present is the favored constrictor of blood-vessels. Some form of insoluble antiseptic astringent is indicated as a dressing for the ulcer, and the mixture of freshly precipitated bismuth hydrate is, in my opinion, an ideal one. However, the subcarbonate may be used with good effects. During the administration of bismuth it is important to distinguish the black color of the stools and vomitus from that due to digested blood. The semicrystalline appearance of bismuth sulphid under the microscope is easily learned, though difficult to describe. A black coating on the tongue indicates the presence of hydrogen disulphid, and unless eggs or beans have been taken by the mouth this is hardly ever present except from the action of the bacillus coli communis in the stomach or duodenum. It is an interesting speculation as to whether the bacillus has actually colonized in the ulcer. It may be well to combine a more powerful gastro-intestinal antiseptic, like salacetol, benzonaphthol, or the like, with the bismuth. Menthol and similar stimulants of local circulation should be avoided as long as danger of hemorrhage exists.

Addendum.—Since writing the above, my attention has several times been directed to the importance of knowing whether blood is or is not present in various secretions and excretions. There is no satisfactory test. I have known the test with guaiacum to fail after the intentional addition of several drops of blood to urine. Of at least negative value is the hematoidin reaction obtained by acidifying with acetic acid and extracting with ether, when a brownish color should occur. In a recent case the diagnosis of cancer of the bowel had been made largely on account of the belief that blood was present in the stools. This test showed its absence. The appearance of a reaction may be due to bile pigments.

THE CAUSE AND TREATMENT OF BUBO.

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BUBO may be caused by chancroids, gonorrhea, chancroid and chancre or mixed infection, chancre, trauma, or by non-venereal elements. This classification represents the order of frequency, as it has occurred in the writer's practice.

A chancroidal bubo is by far the most frequent complication of chancroid. Sturgis[1] states that in 249 cases of chancroids bubo occurred in 71, a percentage of 28.5. Szadet[2] reports 1084 cases, among which were 274 buboes, a percentage of 25.1. Martin[3] records 19 per cent. in 163 cases in his hospital service, while in private practice there was only 5 per cent. of buboes in all cases of chancroids treated. In the writer's record of 156 cases of chancroid, bubo occurred in 53, a percentage of 33.9. These figures are taken from dispensary work, while in private practice my percentage has been less than 3 per cent.

While buboes may be double or single, the majority of them are single. Sturgis in 71 cases of buboes records 54 single and 17 double. Perry[4] in 36 buboes records 27 single and 9 double. In the writer's 53 cases, occurring in dispensary work, 43 were single and 10 double. In private practice all buboes due to chancroids have been single. The writer believes that there is no source so pronounced a factor in the cause of chancroidal buboes as uncleanliness.

Luca[5] holds that simple bubo is due to the ordinary pyogenic bacteria, while the ulcerating bubo is the result of the direct action of the specific microbe developing inflammation only after opening, because the microbe is aerobic. Ducrey,[6] the father, so to speak, of the bacilli found in chancroidal sores, states that he believes that chancroidal buboes are the result of destructive action upon the glandular tissue of the chemical products engendered by the micro-organism of soft chancre. He further states that the bacilli of chancroids can be found in the pus of chancroidal buboes.[7] These views have been upheld by Welander,[8] Krefting,[9] Unna,[10] and other observers. The latest observations on this subject come from the pen of Deutsch,[11] recording 66 cases of suppurating buboes, 37 of which occurred with chancroid, and 29 with either chancre or a mixed sore. Of the 37 cases occurring in a complication of chancroid, inoculation upon the abdomen was successful, with the production of a typical chancroid in three instances only. In these three cases the pus from the buboes showed the presence of the Ducrey-Krefting bacillus. The pus obtained from the buboes could be classified under one of three heads: Sterile pus; pus containing streptococci or other pus-producing micro-organisms; pus containing the Ducrey-Krefting bacillus, either with or without the admixture of other micro-organisms.

It was found that buboes containing sterile pus healed within a short time and the auto-inoculations were unsuccessful; seven to ten days usually sufficed for healing to take place. Those buboes under the second heading took a longer time to heal, fourteen to twenty days, being longer in the cases of strumous individuals, and inoculations in these cases were unsuccessful. Those buboes containing the Ducrey-Krefting bacilli took a much longer time to heal, and were most difficult to treat. Auto-inoculation in these cases was successful. This careful bacteriological and experimental study on this subject makes Deutsch's article one of the most important and valuable contributions to the study of buboes that has appeared in recent years. On the other hand there are many authors who do not believe in the buboes of chrancroids being caused by micro-organisms. Taylor[12] says, "When I say in some cases in which there has been absolutely no chancrous pus-contamination of the abscess, dirt, uncleanliness, and carelessness have caused the suppurating process to become virulent and to assume all the features and qualities of a typical chancroidal abscess."

White and Martin[13] say that the direct cause of bubo is not clearly formulated. The destructive adenitis is not due to the action of micro-organisms upon the gland. Cultures and auto-inoculations made with the discharge of buboes give negative results, and microscopic examination of such discharge fails to show bacteria. The degeneration of the glands is probably owing to the presence of a chemical irritant absorbed from the ulcerating surface.

Of the 156 cases of chrancroids occurring in the practice of the writer, chancroidal buboes were present in 53 instances. Of these, 40 presented pus and were opened. Three were simple enlargements of the gland, and never reached the stage of pus formation. Of the remaining 10, 6 had broken down and were in a bad condition when the patients presented themselves for treatment. Four became infected at or after the operation. Out of the 40 cases of buboes, the pus was examined in 20 by the microscope, by culture-media, and by reinoculation, results being negative in all instances. In the ten cases of virulent buboes the pus was examined in all, and gave positive results of the presence of the pus-forming micro-organism by the microscope and by culture-media. Reinoculation was not successful. Nothing resembling the Ducrey-Krefting bacilli was discovered.

GONORRHEAL BUBO.

Taylor[14] states that an adenitis following a gonor-

rhea is the result of the too actively aggressive treatment of gonorrhea or of bodily strain. Lydston[15] believes that a bubo complicating a urethritis is due in every instance to secondary lymphatic infection by pus-microbes. Finger[16] states that Brockhard found streptococcus pyogenes in the pus of an acute suppurating adenitis complicating gonorrhea, and it is, therefore, probable that we sometimes have to deal with a mixed infection. Perry[4] claims that it is a somewhat rare complication and when it occurs it is probably due to the absorption of a chemic poison, the result of a mixed infection.

A short time ago I had a very interesting case of gonorrhea complicated by a bubo. The urethral discharge contained the Neisser coccus. At the time of consultation it was the third week of the disease, and the patient noticed a small lump in the left groin. The bubo pointed and had to be opened. The urethral treatment consisted of chlorid of sodium, 1 grain to the ounce, injected four times daily. The discharge was examined daily, and as the bubo enlarged the germs were disappearing from the discharge until the bubo was opened. After this the urethral discharge ceased. The bubo was treated carefully, and healed within ten days. The pus from the bubo was carefully examined. The results were negative. It hardly seems possible that the salt solution used as an injection exerted any influence upon the course of the disease, especially upon the urethral inflammation. The bubo may have been caused by the active and perhaps the severe treatment that the patient received at the start; he was being treated by the hot irrigation of permanganate of potassium four times daily. The patient was not in a debilitated condition when under treatment.

The percentage of gonorrheal buboes in my practice is 2.3 per cent.

CHANCRE AND CHANCROIDAL, OR "MIXED CHANCRE."

I have seen but ten cases of the "mixed chancre," all of which were complicated by buboes. In all but two cases they were double. The two exceptions were followed by the most virulent suppuration, but as soon as the patient was put on an antisyphilitic treatment they responded quickly. These two cases, I believe, were the result of a too active and severe treatment of the mixed sore.

CHANCRE BUBO.

Chancroidal buboes are invariably double, and it is rare for them to break down and suppurate. I have seen four cases of syphilitic buboes which suppurated. This was due in each instance to the irritation and inflammation caused by the cauterization of the initial lesion with nitric acid. This occurred in the clinic of a celebrated foreign syphilographer.

TRAUMATIC OR NON-VENEREAL BUBOES.

My records show 20 cases of buboes of traumatic origin. In every instance a careful examination and inquiry was made into the history of the patient and the result was that venereal causes were excluded. In only 6 of the cases was the general health poor. In none was there an abrasion or sore on the penis. In 2 cases there was a distinct irritation in the foot. One was an infected toe from an ingrowing nail, and the other from an abscess of the sole of the foot. No suppuration took place.

Godding[17] says that non-venereal buboes are quite common in the British navy, both in the home and in the foreign department. The inguinal glands alone are attacked, the exciting cause being a sprain or an abrasion on the toe, but there may be no appreciable cause. The glands may or may not suppurate. The constitutional condition is usually low. In seven years the yearly average was 733 cases among 56,000 persons, or about 13 per 1000. These cases are reported with detailed symptoms.

TREATMENT.

I was taught some ten or twelve years ago, and that teaching was by some of the best genito-urinary surgeons at home and abroad, to cauterize the penile sore by pure carbolic or nitric acid, and then dust on iodoform if the sufferer was a charity patient, or if a private one boric acid and calomel, and encase the organ in a bichlorid dressing. This manner of procedure was invariably followed by buboes. Martin[18] says cauterization of the chancroid is the safest routine treatment, and for this purpose he advises zinc chlorid, caustic potash, bromin, iodin, nitrate of silver, and the actual cautery. By far the best means is the actual cautery, either the glowing iron, the Paquelin apparatus, or the galvanic cautery.

Munn[20] advocates in cases of concealed chancroids with phimosis, incision of the dorsum of the prepuce, curetting of the infected sore and the soft mushy adjacent tissues, followed by circumcision. Out of 21 cases thus treated, all but two were successful. Thorough antiseptic precautions were practised in all cases. In regard to reinfection, he makes the following statement: "Theoretically, it might seem that infected lymphatics would reinfect deep tissues after the most thorough curettage, but this has not occurred, although in a number of instances the inguinal lymphatic glands were so enlarged as to require excision at the same time as the circumcision."

If I have the good fortune to see the chancroid in the first 48 hours or during the first week, providing the lesion has not involved much of the surrounding tissue and is superficial rather than deep, I pro-

ceed as follows: The patient is put under ether, the surrounding parts are shaved, then washed with green soap and water, then irrigated thoroughly with bichlorid, 1–2000, the lesion is thoroughly cauterized with the Paquelin cautery and then dressed with glutol-Schleich and moist bichlorid gauze, 1–1000. If the latter is put on properly it will not come off. My practice is to leave the dressing on from 5 to 7 days. If it is necessary to redress the wound the same steps are repeated with the exception of the cauterization. My results show a cure in from 7 to 12 days. Fifteen cases thus treated give an average cure in 12 days, without buboes. If the lesion has involved much tissue, the above steps are followed out with the exception of using the cautery. A sharp curette is employed. The average cure in 10 cases has been from 14 to 17 days. No complication of bubo was observed. In those cases complicated by a slight inguinal enlargement it is my practice to apply some unguentum hydrargyri (U. S. P.) and a pad consisting of a sufficient number of layers of gauze to make it one-half an inch in thickness, 6 inches in length, and 3 in width, which is held in place by a tight spica. In these cases the inguinal enlargement disappears as the chancroid heals.

In cases of chancrous phimosis I believe the treatment advanced by Munn is the most rational procedure yet proposed. My experience with this method embraces only eight cases, all of which responded promptly without reinfection or complication.

The treatment of buboes is generally divided into the following methods: (1) External applications. (2) Hypodermic injections of various medicinal agents into the gland. (3) Incision. (4) Excision.

To abort buboes in their first stage by the external application of drugs is in the majority of cases hopeless. Tincture of iodin, belladonna ointment or ichthyol (10 per cent.), when applied to a bubo as a complication of a chancroid, is simply a waste of time and does more harm than good. In some cases of gonorrheal and non-venereal buboes I have seen the application of belladonna ointment, with the gauze pad and a tight spica, yield some very good results, but I believe that these were obtained more through the effects of the spica than from the ointment.

The treatment of buboes by hypodermic injections of various antiseptic solutions has been proposed as a method of absorbing them. M. K. Taylor[31] advocated the use of 10 grains to the ounce of carbolic acid, 10 to 40 minims of this solution being injected into the bubo. I gave it a trial in six cases of buboes from chancroids and it was a failure in each instance.

Welander[8] advises the use of a 1-per-cent. solution of benzoate of mercury to abort buboes and reports good success. Out of 15 cases thus treated by the writer 2 were successful, and in 13 cases it failed. In each instance there was considerable pain, and in 1 case the reaction was so marked that the patient was confined to his bed for three days with a fever that ranged from 100° to 103° F., and finally the bubo had to be incised. The treatment of suppurating buboes by incision as soon as fluctuation is observed is in the writer's opinion by far the best practice in these cases.

Helm[33] was the first to devise the treatment of buboes by incision and the application of iodoform blown into the cavity. This method with the modification of using iodoform ointment in the cavity was very carefully discussed in a paper by Fountain,[35] but it was reserved for Hayden[34] to modify and demonstrate this form of treatment, and institute a method which to-day gives better results than any other method yet devised. In 25 cases treated by Hayden's method the average duration in which the patient was under treatment was 18 days. The shortest was 9 days and the longest 24 days.

In 40 cases treated by the writer's method, which is nearly the same as Hayden's, with one or two exceptions, I obtained the following results: 28 patients were cured in 6 days, 7 in 9 days, 3 in 12 days, and 2 in 18 days. The shortest duration was 6 days, and the longest 18 days, the average being about 11 days. The different steps are as follows: The parts are shaved and scrubbed with hot water and green soap, then washed with bichlorid, 1–1000; a few drops of a 4-per-cent. solution of cocain are then injected under the skin at the most dependent point of the bubo, and it is again washed with bichlorid, 1–1000. The incision is made at the selected point with an ordinary sharp-pointed bistoury carried well into the bubo, and all the pus is expressed by firm pressure. The cavity is then irrigated with pure peroxid of hydrogen. This is continued until the fluid returns clear. This is followed by irrigation with a warm solution (100° F.) of bichlorid, 1–3000, for 2 or 3 minutes. The cavity is filled with glutol-Schleich, forced into it by a powder blower of sufficient size to allow the glutol to pass through it, and glutol is sprinkled over the external wound. A gauze pad squeezed out in 1–3000 bichlorid is placed over the wound, and a tight spica bandage is placed over all.

It is my practice not to remove the bandage for 6 days unless there is staining from the discharge or the bandage has slipped. It is best for the patient

to remain on his back for the first 24 hours. The scar left from the incision is small. The glutol in my hands has given me better results than has 10-per-cent. iodoform-vaselin, and a great factor to be considered, especially among private patients is the disagreeable odor of iodoform, to which one and all most emphatically object, as they believe it is a trade-mark of their trouble.

The excision of buboes has for its champion Watson[25] who has very carefully laid down the rules and steps of the operation, and reports an amount of success that hardly seems possible. From 20 unselected cases, he gets union by first intention in 10 cases. Taylor[13] is also a mild advocate of this method. I am of the opinion that the operation is unnecessary. Dr. Coley of New York informs me that he has observed hernia, as a result of this operation, in a number of instances in his service at the Hospital for Ruptured and Crippled. I have seen in the past few weeks a man who was rejected from the United States service because of similar scars. I have practised this operation four times. A cure was attained in all cases, but two required 28 days, one 22, and the other 26 days.

The buboes of syphilis respond promptly to the specific treatment. They seldom suppurate. The buboes of gonorrhea can be aborted by the application of some mild ointment with pressure applied in the form of a spica.

The buboes of non-venereal or traumatic origin respond well to the treatment of pressure by a tight spica with some mild ointment applied over the bubo. It may be necessary in some cases to place the patient on some appropriate internal medication. One must be governed by the individual requirement in each case. It is rare for these buboes to suppurate.

Gaither[26] advocates a method of absorbing buboes by means of a pressure bandage, which is applied as follows: "A piece of cotton as large as the fist is folded in on itself again and again until it has the shape of the bubo, and when placed on it does not completely cover it. This is carefully adjusted and a wad of tightly compressed cotton as large as a cocoanut placed over it. Small pieces of cotton are also used on the inner and outer surfaces of the thigh to prevent chafing. A very tight spica bandage is then put on. This bandage is put on regardless of the age of the bubo, and a satisfactory result was obtained in more than 85 per cent. of the cases."

The conclusions which the writer wishes to convey, are: First, he believes that with proper care of the sore on the penis the complication known as bubo may be aborted; second, that there is but one method to treat suppurating buboes successfully and that is by early incision of the tumor and antiseptic treatment. The operation becomes of importance only after the incision when careless after-treatment makes the percentage of uncured cases high.

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For Chloasma.—

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CHOLELITHIASIS; WITH A REPORT OF SOME OPERATIVE CASES OF DR. CHARLES M'BURNEY.

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ESTIMATES have been made that ten per cent. of all persons have gall-stones at some period of their lives. It is also stated that only about a quarter of these persons suffer from the presence of the calculi. It is impossible to prove the accuracy of these figures, but we do know that autopsies are frequently made on individuals in whose gall-bladders a number of stones exist, and yet the calculi have given rise to no trouble during life. Why one individual should be made to suffer the pain and misery which form the striking symptoms of the disease while another, with the same pathological conditions, can journey through life entirely unconscious of the sufferings he has escaped is difficult to answer. The causes of gall-stones undoubtedly depend on two main pathological changes: an inflamed condition of the mucous membrane lining the bile passages and an altered condition of the bile itself, although there are other contributory factors of secondary importance. The change in the mucous membrane of the ducts is an extension of a similar process from the lining of the intestines and stomach, having as its etiology a gastroduodenitis of a mild chronic type brought on by abuse of the alimentary tract. This alteration in the mucous membrane favors the deposit of the cholestrin, inspissated bile, and other bile elements which go to make up the substance of the calculi.

The change in the composition of bile that favors the formation of calculi is a decrease of bile salts and a diminution of the watery elements. Biliary calculi are formed in the bile radicles of the liver, or more commonly in the gall-bladder. As to shape and appearance, one may classify the stones into three general forms: The first and perhaps least common are large, smooth, rounded, or ovoid masses about the consistency of dry putty and are easily broken up. They are not infrequently half an inch in diameter. The second type consists of small, rounded masses covered with little sharp spicules. The stones are hard, jet black, and about one-quarter of an inch in diameter. The third and most common form is the familiar, smooth-facetted brown stone, with a great range of size, varying from tiny particles to that of a large hazelnut. In addition to the calculi simple inspissated bile may give rise to the symptoms of cholelithiasis.

After the calculus is formed at its site of origin, either in the gall-bladder or in the liver, its subsequent history may be as follows: The calculus makes no attempt to escape, but remains quiescent, not giving rise to symptoms; or else the stone makes one or more attempts to pass out of the gall-bladder, but finding the cystic duct too small, falls back into the gall-bladder only to renew the attempt later. Still another type is that in which the stone leaves its site of origin, passes into the bile-ducts (either the cystic or hepatic), hence into the common duct, and finally escapes into the duodenum. The cases in which the worst class of symptoms arise are those in which there is an attempted passage of a stone, but the final escape into the intestine fails and the calculus remains lodged in the common duct.

The symptoms of these several conditions are but logical deductions of the various causes. When the stone remains quiescent in the gall-bladder or liver there are no symptoms; if the calculus attempts to leave the gall-bladder there is pain, due to the partial distention of the cystic duct, owing to the attempts of the stone to engage, and also pain from the distention of the gall-bladder with mucus, with cessation of pain when the stone slips back into the gall-bladder and the mucus has a chance to escape. The complete passage of a calculus, unless very small, produces the well-known symptoms of biliary colic. Intense agonizing pain in the region of the gall-bladder, radiating to the back and epigastrium; the sudden cessation of the pain, with the development of jaundice in a day or two, are the main symptoms. The jaundice is due to the obstruction of the common bile-duct by the swollen mucous membrane, produced by the irritation of the stone in its passage.

The most interesting class from the standpoint of the surgeon is that in which the gall-stone, having left its point of origin, attempts to pass into the intestine, but finding the ducts too small, is caught at some point in the lumen of the cystic, hepatic, or common bile-duct and is unable to advance or to retreat because the swollen mucous membrane has diminished the caliber of the duct. Here the stone remains, more or less occluding the duct. The bile, if the stone is in the hepatic or common duct, banks up behind and around the stone until the duct is sufficiently distended to allow the bile to pass the obstruction and thus escape into the gut. This condition repeats itself until a permanently dilated area is formed in which the stone rocks back and forth like a shuttle in its groove, occasionally obstructing the passage of bile by becoming caught in the distal end of the tube and acting as a ball-valve whenever the stone attempts to escape.

The general symptoms of such a state of affairs

are, first, an attack of sharp, severe pain, coincident with the original excursion of the stone. The pain gradually subsides as the duct becomes stretched and accustomed to the pressure of the stone. There is also severe and prolonged jaundice with several exacerbations until the duct has become sufficiently enlarged to allow the bile to flow freely around the obstruction. When the dilatation of the duct is well established the patient returns more or less fully to a state of good health, but the presence of the stone in the duct is a source of subsequent attacks of pain and jaundice. If the stone has become lodged in the cystic duct the jaundice is absent, but the mechanical conditions are the same; the gall-bladder becoming distended with mucus causes much pain. The gall-bladder may empty itself by dilating the cystic duct, or a condition of empyema of the gall-bladder may supervene.

Not much skill is needed to make a diagnosis of gall-stones when the main symptoms are paroxysms of pain in the region of the gall-bladder radiating to the back and epigastrium, followed by jaundice, although one must bear in mind the possibilities of tumors pressing on the passages. The difficult cases to diagnose are those unaccompanied by jaundice. In such cases the pain is often referred to the epigastrium, begins with moderate severity, and may take two or three days to reach its climax (here the pain is caused by the gall-bladder being distended with mucus). The pain ceases when the tension is relieved. Many of these patients are treated for gastric neuralgia, gastric gout, indigestion, dyspepsia, etc.

The treatment by medical means is directed toward restoring the normal state of the mucous membrane and rendering the bile more fluid. The treatment is mainly prophylactic. The plans often suggested for dissolving stones already formed are absurd, but undoubtedly medicinal treatment is of great service in favoring the passage and escape of calculi already formed. Dr. Delafield uses olive oil empirically, in pint doses, for this purpose, and has had excellent results. For the removal of stones too large to pass through the channels of exit, and which call for interference on account of prolonged jaundice, empyema of the gall-bladder, abscess of the liver, or continued attacks of severe pain, surgery is the only relief. If it could be positively determined that the lesions were confined to the gall-bladder, either as a gall-bladder overdistended with mucus, pus, or calculi, the operation could be made comparatively simple. The plan in such a case would be as follows: A short vertical incision should be made through the abdominal wall just to the inner side of the outer margin of the rectus muscle over the fundus of the gall-bladder. The gall-bladder should then be drawn forward and stitched to the edge of the wound. The next day, after sufficient time has elapsed to shut off the peritoneal cavity by an agglutinating peritonitis, the gall-bladder should be opened and the contents evacuated. After several days of free drainage the gall-bladder and abdominal wound should be allowed to heal by granulation Such a procedure would be rapid, safe, and sure. On the other hand it is almost impossible to determine, through a small incision, whether the lesion is confined solely to the gall-bladder or whether some additional trouble is present in the liver or ducts. This point must be positively determined before it is justifiable to limit the operation merely to opening the gall-bladder. To make a careful examination of all the bile passages a generous incision is needed.

In determining the best forms of incision the fact must be borne in mind that, other conditions being equal, the subsequent tone and vigor of muscular tissue after operation depends on the number of nerves supplying those muscles which have been cut. It is also perfectly well established that a muscle split in the direction of its fibers presents a stronger healed surface than those in which the fibers have been cut across. A review of the course of the dorsal nerves which supply the rectus and other abdominal muscles will aid in determining the line of incision. The lower dorsal nerves emerge from under cover of the ribs, pass obliquely downward, forward, and inward until they reach the margin of the rectus. On reaching the outer margin of the rectus the nerves divide into two branches, the upper branch passing inward and slightly upward and the lower inward and slightly downward. The course of the nerves can be very accurately outlined by mapping out certain lines on the abdomen. For this plan I am indebted to Dr. George E. Brewer. The plan is as follows: From a point one-half inch below the tip of the last rib draw a line to the spine of the pubes of the opposite side. This line, or rather as much of it as extends from the point of origin to the outer margin of the rectus muscle, very accurately overlies the twelfth dorsal nerve as it courses along under cover of the internal oblique. On reaching the border of the rectus the nerve splits into its two branches as described above. A similar line drawn from a point one-half an inch above the tip of the twelfth rib to the middle of Poupart's ligament on the opposite side marks the eleventh nerve. A line starting one-half inch in front of and above the tip of the eleventh rib and extending to the anterior-superior spine of the ilium of the opposite side traces the course of the tenth nerve. The eighth nerve

runs just below the inferior margin of the eighth rib, passes forward and upward to the ensiform cartilage, following closely the curve of the eighth costal cartilage through the entire distance. The nerve never lies more than half an inch below the inferior margin of the eighth rib or cartilage. The ninth nerve lies between the ninth and tenth ribs. It leaves the line of the ninth rib at the osteochondral junction and passes forward, downward, and inward to the margin of the rectus muscle. There are no suitable landmarks from which to find the approach of the ninth nerve to the edge of the rectus. It is sufficiently accurate to describe the ninth nerve as splitting up into its two branches at the edge of the rectus at a point midway between the entrance of the eighth and tenth nerves into the muscle.

Having mapped out the nerves an incision should be made which will destroy as few nerves as possible and at the same time give enough room for free exploration and operation. The best incision extends from about half an inch below the free border of the costal cartilages to a point two or three inches above the umbilicus. It passes just within the outer margin of the right rectus muscle. The wound only destroys one nerve, the ninth, and divides the muscle in a longitudinal direction. It also provides enough room for exploration and operation. Another point of entrance which offers the advantage of giving far more room without destroying any more nerves (the ninth being destroyed in either case) is a curved incision parallel to the free border of the costal cartilages and about one inch below them. The incision starts just below and to the outer side of the ensiform cartilage and may be made to extend as far posteriorly as the point of emergence of the tenth nerve. A serious objection may be urged against this second incision, for, although a far greater field is exposed, nevertheless, the muscle fibers of the rectus, external oblique and transversalis are divided at nearly right angles to their long axes. Even after primary union a cut muscle is not so strong as a split muscle.

Having freely exposed the gall-bladder and subhepatic region by means of either of these incisions the bile-ducts should be carefully examined with the finger to detect any impacted calculi that may be present. It is quite possible that a stone lightly lodged in the ducts may be pushed by manipulations into the intestine either by accident or design. But the greatest care and gentleness must be observed in the attempt to force a stone onward as it is not a difficult matter to seriously injure or even rupture the ducts by attempting to crowd through them a stone larger than the caliber of the ducts will admit. After locating the calculi in either the gall-bladder or the ducts the question of the best method of removal must be decided. If in the gall-bladder, the calculi are removed through an incision in the fundus of the gall-bladder after the latter has been stitched to the abdominal wound. The entire abdominal wound may then be closed by suture except the small portion surrounding the fundus of the gall-bladder. On the other hand, if the calculus be impacted in one of the ducts, the duct is incised and the stone removed and subsequently the wound in the duct is sutured, but only a part of the abdominal wound can be closed, as leakage from the sutured duct must be guarded against by packing.

The anatomical position of the lower part of the common duct coursing behind and under cover of the duodenum is such as to render the exposure of the duct by dissection entirely impracticable. Hence, it is impossible to extract a calculus impacted low down in the common duct by incising the duct at the point of obstruction. To obviate this difficulty Dr. McBurney has devised the plan of opening the intestine and withdrawing the obstructing calculus by means of forceps introduced through the intestinal orifice of the common bile-duct. An additional value of this method is that it permits a greater closure of the abdominal wound than would be safe when the bile-ducts have been incised, for although the ducts have been closed by suture, the risk of leakage is great and must be guarded against by generous packing. The dilatation of the orifice of the duct is also a probable advantage.

The operative procedure is as follows: The abdomen is opened by either the vertical incision or the curved one along the margin of the costal cartilages. Any adhesions that can be broken down with safety are destroyed. An incision one inch long longitudinal to the long axis of the gut is made in the anterior wall of the duodenum, about an inch below the beginning of the descending portion. With the finger the cavity of the descending duodenum is carefully explored until the papilla marking the conjoined orifice of the common bile-duct and pancreatic duct is felt. This papilla is situated at the junction of the inner and posterior walls of the duodenum and about an inch below a crescentic fold of mucous membrane which marks the angle of junction between the ascending and descending portions of the duodenum. The papilla is then drawn into plain view, the orifice identified, and a probe passed into the common duct.

Having established the entrance into the bile-duct a pair of toothed forceps is introduced along the interior of the duct as far as the obstructing calculus, which is then grasped with the forceps and withdrawn. The introduction of the forceps and the re-

moval of the stone markedly dilate the normally narrow opening of the common bile-duct. The dilatation of the orifice is of probable value in permitting the easy escape of the inspissated bile or small calculi that may have escaped observation. The intestinal wound is now closed by an ordinary double row of sutures and the abdominal wound closed, or a drainage-tube may be left leading down to the suture line in the intestine. The tube is only left in place forty-eight hours, after which time the wound may be fully closed with secondary sutures.

One of the most annoying sequelæ of cholecystostomy is the long time the biliary fistula remains patent, in some instances never closing without a second operation. In the more recent cases of patients operated upon at the Roosevelt Hospital Dr. McBurney has employed a modification in technic which has markedly hastened the closure of the fistula. The ordinary procedure has been to suture the edge of the incision in the fundus of the gall-bladder to the opening left in the abdominal wall. A rubber tube or gauze drain is then put into the gall-bladder. Dr. McBurney's plan is to suture the circumference of the gall-bladder about one-half an inch below the fundus to the edges of the abdominal opening. A purse-string suture is then passed around the gall-bladder between the opening in the fundus and the line of suture to the abdominal wall. The purse-string, of course, involves only the muscular and serous coats. The free edge of the incised fundus is now inverted with thumb forceps, a small rubber drainage-tube introduced, and the purse-string tightened so as to prevent a reversion of the inverted parts to their original position. Of course, the suture is not drawn tight enough to occlude the lumen of the rubber drain. The value of this method is apparent when, after several days, the drain is removed. The inverted flaps act as valves to partially prevent the leakage of bile, and, more especially, the serous surfaces are approximated, thus producing far more rapid closure than if one depended upon granulations.

In the following five cases only the gall-bladder was opened and drained by either a rubber tube or gauze: (1) The biliary fistula was patent and bile flowing freely at the end of one month. (2) Bile still flowing at end of six weeks. (3) The gall-bladder was found empty. Subsequent discharge of bile was very slight. Fistula closed in three weeks. (4) Many stones were being discharged and fistula did not close for two and one-half months. (5) Bile still discharging at end of two months. As opposed to this list attention is called to the rapid closure in cases in which the gall-bladder had been inverted. (*a*) Nine hundred and fifty-nine stones removed. The fundus was inverted. In ten days the fistula was closed. (*b*) Fundus inverted. No discharge of bile at the end of five days. (*c*) Practically no discharge at the end of eight days.

There have been five patients operated upon by the method of opening the duodenum and extracting the calculi through the opening of the common duct. The first operation was performed in December, 1896. The technic was the same as has already been described. After closing the gut a glass drainage-tube was left extending from the abdominal wound to the line of suture. The calculus was found to be half an inch long and three-eighths of an inch in diameter, lying in the lower part of the common duct. The patient died in three days. After death the intestinal wound was found closed and the bile passages normal. The intestines were enormously distended. No gross evidences of peritonitis.

A second patient was operated upon in June, 1897. Two large calculi were felt in the lower part of the common duct and were removed through the intestine. Several large calculi were removed from the gall-bladder through an opening in the fundus. There was also a large stone in the cystic duct, which was removed through the gall-bladder. The intestinal wound was sutured and a glass drain left in the abdominal wound leading to the line of suture. The fundus of the gall-bladder was inverted around a small rubber tube. At the end of two days the glass tube was removed, and at the end of five days the rubber tube also. There was no leakage after the tube was removed. At the end of one month the wounds were healed, but the patient had another attack of biliary colic with jaundice. The symptoms disappeared in a week and since then he has been in complete health. The secondary attack was doubtless due to the passage of some small calculi overlooked at the time of operation. There were two other instances of impacted calculi being removed through the intestine. The histories are not at hand, but the results were successful and the healing rapid.

The most recent case was that of a patient operated upon in April, 1898. A calculus of the size of a hazelnut was found impacted close to the intestinal orifice of the common duct. The intestine was incised. By placing the finger outside the lumen of the gut, but within the angle between the ascending and descending duodenum, the stone could be felt and pushed, together with the orifice of the bile-duct, into the incision in the gut. Then the orifice of the duct was peeled off from the calculus and the stone was removed. The gall-bladder seemed to be empty and was not opened. After closing the intestinal wound the entire abdominal wound was

closed by sutures. At the end of eight days the wounds were healed, the patient much improved, and there was every prospect of a complete and rapid recovery.

CLINICAL LECTURE.

FACIAL NEURALGIA.[1]

BY WM. L. RODMAN, M.D.,
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FORMERLY PROFESSOR OF SURGERY AND CLINICAL SURGERY IN THE KENTUCKY SCHOOL OF MEDICINE; SURGEON TO THE STS. MARY AND ELIZABETH HOSPITAL; CONSULTING SURGEON TO THE LOUISVILLE CITY HOSPITAL.

THIS patient, Mr. B., aged forty-one years, was sent to us by Drs. Brown and Ishmael of Winchester, Ky. He has been troubled with a neuralgic condition of all the branches of the fifth nerve on the right side. The pain at first was thought by himself and his wife to be due to his teeth, and with that one idea in mind he applied to a dentist and had a number of teeth withdrawn; in fact, all the upper teeth on that side except the last molar. He says that the pain extends to the middle line; there is no pain on the left side at all; it comes down below the eye, up above the eye, and on the side of the head back as far as the filaments of the fifth nerve are distributed. This makes the case, then, one of neuralgia of the fifth nerve.

The history of the case would not seem to indicate that the trouble is of central origin. The patient has never had any specific disease, nor has he ever had any lesion that would lead one to think that there is any central trouble. He has recently suffered from various local complaints, but I will not speak of them as I cannot see that they have any bearing on the case and you might be misled thereby.

It will be noticed that the left side of his face twitches a great deal; that it is markedly choreic, though on this side he says there is no pain. The pain is confined entirely to the right side, and has existed almost continuously during the last fifteen months, whereas the choreic symptoms on the left side have lasted six or seven years. As a matter of course he has suffered greatly, and has taken everything in the materia medica in order to obtain relief, which has not been secured. He has been under the care of some of the most intelligent and up-to-date physicians in the State of Kentucky, and has had the benefit of everything that can be suggested in the way of medical treatment. Of course, medicinal agents give him relief to a certain extent, but do not effect a cure, and his physicians, after having treated him for fifteen months, have come to the conclusion that nothing but surgery offers promise of permanent relief.

The only kind of surgery suited to a case of this kind, or that would offer anything, would be intracranial section of the fifth nerve. Time and time again I have excised the supra-orbital and inferior orbital as well as other branches of the fifth nerve for relief of conditions of this kind, and while relief has been temporary, in no case in my own practice, or of which I have knowledge in the practice of my confréres, has the relief been at all permanent. The pain has always returned. Therefore we must offer something more than temporary relief, and if we operate upon this patient, as I think we shall, then it will be an intracranial neurectomy of the fifth nerve. The best operation for reaching the fifth nerve is one which was devised at the same time and independently of each other by Hartley of New York, and Krause, a German; therefore, it is generally spoken of in this country as the Hartley-Krause operation. The head having been well shaved and rendered thoroughly aseptic, an omega-shaped incision is made down to the bone. The temporal or other vessels that bleed are caught up, the flap turned down, and with a chisel a free cut is made into the bone all around to the same extent as the flap of the soft parts. In turn the external table and the diploe are cut through, and with retractors the flap is lifted up, the bone, muscles, and periosteum being turned back so as to allow ample room. The brain is then lifted up and the two main branches of the fifth nerve, which come in here at the foramen ovale and foramen rotundum are easily found. The two branches can easily be traced back to the Gasserian ganglion, which is located in the apex of the petrous portion of the temporal bone. These two branches, the superior and inferior maxillary, pass out from the lower two-thirds of the Gasserian ganglion. It is best, as a rule, not to interfere with the first division of the fifth nerve, because it is the ophthalmic branch which goes to the eye, and very serious conjunctivitis and panophthalmitis may ensue if this branch of the nerve is cut. For that reason it is also best not to interfere with the upper third of the ganglion of Gasser, for if it is all taken out the ophthalmic branch will be affected. Even though I shall aim not to injure the ophthalmic branch, I may do so during the operation. I shall sew his eyelids together before the operation and keep them sewn together for a week afterward, so as to keep out the light, and try to prevent any inflammation about the eye.

There are dangers in this operation, as a matter of course. It is not an easy operation in the first place, neither is it one devoid of danger. It is to be expected that hemorrhage is a feature of the operation for the reason that the temporal artery is cut when the soft parts are divided. When the bone is cut through and then fractured and the flap overturned, the middle meningeal artery will frequently be ruptured. It depends upon whether the artery runs through the foramen or through the groove at the anterior inferior angle of the bone. Sometimes it is in the groove, sometimes in the foramen; if it is in the groove it will not be ruptured; if in the foramen it likely will be. It is not a particularly grave accident because the wound is an open one, and the meningeal artery can easily be grasped and tied. The temporosphenoidal lobe is the one to be raised. Underneath the base of this lobe can be seen the second and third branches of the nerve, one going to the foramen ovale, the other to the foramen rotundum, and during this step of the operation it is better for the surgeon to have a good mirror attached to his forehead in order that a strong

[1] A Clinical Lecture delivered at the Hospital of the Kentucky School of Medicine.

light may be thrown on the field of operation. As the brain is lifted up and the surgeon cuts down upon these branches he necessarily divides some blood-vessels, but if the operation is performed carefully hemorrhage, as a rule, is not great, though in many cases it has been so profuse as to necessitate immediate packing with gauze, the gauze being left *in situ* two, three, or four days, the operation thus being completed in two stages. So great a surgeon as W. W. Keen of Jefferson College, Philadelphia, has reported nine cases of this operation, and if I mistake not, in four or five of them he was compelled to complete the operation in this way. In one case he packed in an enormous quantity of gauze before hemorrhage was controlled. Many other operators, Hartley of New York, Tiffany of Baltimore, Gerster, McBurney, and others, have completed the operation at one sitting, and do not speak of hemorrhage as being such a marked feature of the operation. Still, one should be prepared for considerable hemorrhage, although the operation should be completed at one sitting if possible.

The brain is lifted up and the two branches of the fifth nerve followed back to the ganglion of Gasser; then the two branches between the foramen in front and ganglion behind are cut out. In removing the Gasserian ganglion it is necessary to be very careful not to sever the large blood-vessels in its immediate vicinity. The entire flap is then turned back into position, and a drainage-tube is inserted and allowed to remain in place for forty-eight hours. The wound usually heals without trouble.

The dangers of the operation are principally those from shock, and it can be understood that shock is great. The next danger is the occurrence of sepsis; and the next that an abscess may occur perhaps two, three, four, five, or even six weeks, or even later, after the operation. I believe all these dangers have been exaggerated. Tiffany of Baltimore, a most excellent surgeon, reviewed all the published reports of cases up to the time of delivering his presidential address before the Southern Surgical and Gynecological Society, which met in Washington last November. He wrote to every surgeon in the country to know if he had performed the operation, and as a result of his inquiries he reported 108 cases, many of the patients having been operated upon by himself, but more by Keen than any one else. The mortality following the operation was shown to be about twenty-two per cent., and I have already explained to this patient and his friends that his chances of dying are about one in five. I was perfectly candid with him, and told him what I have just stated to you. I have told him, furthermore, that the less serious operation of excising the inferior and supra-orbital nerves might give him relief, but that I have never seen it occur, although if he wished to have it tried first I was willing to do it.

A great many other operations have been suggested in the past. For instance, Meckel's ganglion may be removed. This was first done in this country, if not the first time in the world, by the elder Pancoast, at that time professor of surgery in Jefferson Medical College, one of the greatest surgeons the world has ever known. The skill and dexterity with which he operated was marvelous. I saw him operate when he was past eighty years of age; he was in his dotage; he could not call anything by its right name, although he had taught anatomy for forty years. He came into the clinic one Saturday morning arrayed in a full-dress suit (he always came before the class in this dress), and his son, with a great deal of manner, characteristic of the family, said to his father: "Will not the distinguished Emeritus Professor of Surgery operate upon this patient?" The old gentleman said he would, and a patient was brought in with an enormous fatty tumor between the scapulæ. I never saw such a brilliant operation in my life. He made the incision with one stroke of the knife, and then with his fingers simply scooped the tumor out.

As I have said, he was the first to remove Meckel's ganglion, and one can readily understand the dangers attending such an operation at that period. Since then other, and I believe better, operations have been devised for the relief of the condition before us. Rose of England devised one in which he goes in from the outside down to the fossa, and resects the ganglion and process, penetrating to the superior maxillary fossa, but I think the best operation is the one of Hartley, the credit for which he is undoubtedly entitled, because he published the report of his case and showed the patient to the Surgical Society of New York before Krause had performed his operation or published a report of it, so we unquestionably should call it the Hartley operation. I probably shall perform the operation upon this patient one week from to-day, or it may be sooner.

The question may come up in your minds, Why perform an operation, seemingly so very severe, in which the chances of the patient's dying are one in five, for facial neuralgia? Is it not too bold? Is it not in a measure unjustifiable? I have never myself suffered from facial neuralgia, but from reports received from patients who have I believe I would rather submit to any operation rather than suffer the pain of the disease, and it may be said that these patients practically never get well under medicinal treatment. If they are relieved temporarily it is only a question of time before they have another attack. That has been the history in the patient before us, and he says life is not worth living in his present condition, that he is becoming desperate from the constant pain, and is prepared to undergo anything which promises relief. Therefore, knowing how much he suffers now, I think we are justified in performing the operation I have outlined to you. Statistics show that the operation almost invariably cures these patients. As a matter of course, if the operative technic is imperfect, if part of the ganglion or even one branch of the fifth nerve is left behind, either the second or third, then the trouble may recur in the area to which that branch is distributed, but a complete and perfect operation almost necessarily promises immunity from neuralgia in that special locality for the balance of the patient's life. This man is a favorable subject, and should recover after the operation. He is only forty-one years of age, which is another good feature. Most of the cases reviewed by Tiffany occurred

in older subjects, and his mortality was about twenty-two per cent. In younger subjects it naturally should be less.

CLINICAL MEMORANDUM.

TRAUMATIC CATARACT IN AN INFANT'S EYE FROM PRESSURE OF FORCEPS.

BY EDWARD S. PECK, M.D.,
OF NEW YORK.

THE case I am about to report seems to be of sufficient importance to be brought before this Section on account of its rarity.

Shortly before eight o'clock on the night of October 14, 1890, I was called in great haste to see a newborn child, and was told that its right eye had been forced out upon its cheek during an instrumental delivery. The mother, a primipara, twenty-one years of age, had been in labor seventy-two hours; extreme uterine inertia had occurred and under anesthesia forceps had been applied by her attending physician two hours previously. The forceps was applied high up, with the result that the right blade fell across the right eye of the child just under the inferior lid. The skin of the forehead was injured a little to the right of the median line, and the helix of the right ear was tightly compressed and turned back, but not torn. Careful examination of the eye showed a large subconjunctival hemorrhage, the whole inferior cul-de-sac of the conjunctiva being filled with blood, and the lower lid correspondingly swollen. The eyeball was softened and flattened from above downward, and was of a quadrilateral form. The cornea was steamy, the pupil larger than its fellow, and the pupillary field was seen to rapidly change from a dull-grayish reflex to a dense whitish body. Under atropin dilatation the opacity of the lens was seen to slowly increase until a soft cataract entirely filled the area of the lens. These changes in the lens occupied about twenty minutes. The sclerotic and corneal coats were not ruptured, but it was feared that a partial detachment of the retina had taken place.

The treatment consisted of instillations of a solution of 1–5000 bichlorid of mercury over the eyeball at regular intervals, the application of ice-cold cloths, and a drop of a solution of atropin sulphate, 1 grain to the ounce, every four hours. On the following day the conjunctival hemorrhage and swelling of the lid had nearly disappeared, so rapid are the absorptive properties of the lymphatics of an infant. A fully formed milky cataract filled the area of the pupil, ocular tension had increased, but the eyeball still retained its square form.

On the following day, forty hours after the injury, the eyeball had resumed its spherical shape, ocular tension was equal to that of its fellow, all lid-swelling was absent, but the cartaract retained its opacity, milky white color, and absence of nucleus. On the ninth day of the child's life the condition was as follows: The lids of the eye opened slitwise without aid, the pupil and cataract being readily seen. The corneal opacity still remained. On the thirty-third day both eyes opened equally well, the cornea had regained its clearness and reflex, the soft cataract still persisted, but perception of light was manifested by subjective tests.

The child was next seen at the age of 5½ months, at which time the following notes were taken: Pupil responsive to light and of same diameter as that of its fellow. Palpebral slit of same size as the other. Ophthalmoscope by the direct method shows a red reflex, and the retinal veins and arteries can be traced. A soft and diffuse cataract remains, the opaque spots showing themselves in flocs. The scar on the forehead is adherent to the frontal bone; the helix of the right ear is bent back.

The child was nursed by its mother and at no time showed signs of pain in the eye. When he was about two years of age the right eye began to show a slight divergent squint. The following was the condition when he was last examined by me, in May, 1898, at the age of seven years and seven months: Right eye—V=20/70+: with a 1.D. lens, V=20/50: reads Jaeger handtypes No. II. with a + 2.D. lens, the head being slightly turned toward the light. Left eye—V=20/12; Jaeger No. I. is easily read at 3 to 16 inches. Right eye has a divergent strabismus of 2½ lines. There is a probability of almost, if not entirely, perfect vision in this eye. Frontal scar is still present, but the integument is no longer adherent to the bone.

The case is interesting for the following reasons: In the first place it is the only case of the kind on record. *Schmidt's Jahrbücher*, the *Index Medicus*, and the "Catalogue of the Medical Library of the United States," fail to furnish a case similar as to the cause of trauma and clinical facts. Secondly, out of 3 carefully watched cases of evolution of cataract due to injury, this is the first I have seen occurring in so young a subject. Thirdly, a trauma severe enough to produce not only cataract but diminished ocular tension, with possibly detachment of the retina and blindness, is followed in a few years by cataract absorption, re-attachment of the retina, and exceedingly useful vision, due to the natural processes of repair and not to operation.

[1] Read in the Section on Pediatrics of the New York Academy of Medicine, November 10, 1898.

MEDICAL PROGRESS.

Unconscious Childbirth.—BALEY (*La Med. Mod.*, August 31, 1898) attended a primipara aged twenty-three years, who was in excellent health. After two hours of slight labor pains the os uteri had dilated to the size of a two-franc piece. Then the pains seemed to die out, and the doctor returned home. Two hours later he was hastily summoned, the patient having stated that the pains were returning. Having prepared his hand for an examination, his surprise may be imagined upon finding the child fully delivered and lying in a pool of amniotic fluid. It was not breathing, but a hot bath and spinal friction restored it to life. The mother was entirely ignorant of the fact that the child had been born. She had perceived the flow of water and a slight increase in the pain, but nothing else. The child weighed six and one-

half pounds, and its delivery had not even broken the skin of the perineum.

A Simple Method of Sterilizing Catgut.—ROBSON (*Lancet*, October 1, 1898) has been experimenting with the sterilization of catgut in fluids the boiling-point of which is higher than water. He found xylol to be the most satisfactory. Catgut boiled in this fluid is better than that boiled in alcohol, for it shrinks, and thus gains in strength and "bites" better when tied. The exact method adopted is the following: The catgut is wound *loosely* from end to end round an elongated glass reel. Several of these glass reels are then introduced into a metal cylinder, the cap of which screws on, and after more xylol than is sufficient to cover them has been poured in, the cap is adjusted. The whole is then put into boiling water in the sterilizer and allowed to remain along with the instruments for from twenty minutes to half an hour. After thus being sterilized, the reels, with the catgut which has shrunk around them, are removed *at once*, and kept in ether in five-per-cent. carbolic-acid solution or in methylated spirit, the latter being preferable, as any aqueous solution tends to cause catgut to swell. In this solution they may be kept on the reels till required. The xylol should be used but once, as a certain amount of decomposition takes place and the catgut will soften if heated in it a second time.

The Simplest Treatment of Umbilical Hernia in Children.—SCHLIEP (*Thera. Monatshefte*, September, 1898) regards an umbilical hernia in the first or second year of life as an almost physiological condition, so common is it. It usually disappears as soon as the child learns to express its desires by some other method than by crying. Experiments have shown that the stump of the umbilical cord is prevented from drying up by the string which is tied around it. It is far better not to tie the cord, but to touch the end of it with a three- or five-per-cent. solution of nitrate of silver. If this is done the cord will dry up in a day or two. If the cord has not fallen off by the third day, Schliep removes it except a very short stump, and dusts the part with powdered formalin gelatin. A bit of cotton soaked in salicylic collodion covers this. Some days later the fragment of the stump which remained comes away, and the granulating surface is touched with a stick of nitrate of silver.

Schliep proposes to use the power of compression of collodion in the treatment of hernia, and especially in the treatment of umbilical hernias of children.

Symptoms of Gastric Perforation.—AUFRAY (*Gaz. Hebdom. de Med. et de Chir.*, September 8, 1898) gives the following rules for the recognition of perforation of the stomach before operation. The pain is sudden, intense, exactly localized, and almost invariably constant. It is usually increased by the ingestion of liquids. This abdominal pain, like the thrust of a sword, is the best diagnostic sign. There will be also noticed an especial tension of the abdomen, a certain hardness with retraction of the abdominal walls, which, if present, cannot fail to point to the stomach as the seat of perforation. Other signs less constant are the intensity and rapidity of the collapse, the absence of vomiting, the fever. As soon as laparotomy is performed the escape of gas without odor, at least without fecal odor, the presence of partly digested food, intestinal adhesions increasing upward, ought all to indicate to the surgeon that he has to do with perforation of the stomach.

Sulphrenic Abscess Following Appendicitis.—SPILLMANN (*La Presse Med.*, September 7, 1898) mentions the occurrence of an abscess after an attack of appendicitis in a rather unusual situation. Abscesses in the pelvis behind the cecum or in the lumbar region are by no means uncommon. In the case referred to a boy aged sixteen years became very much fatigued by a long horseback ride, and suffered from an attack of appendicitis. One week later his abdomen was dilated, there was marked dyspnea with absence of vesicular murmur in the lower portion of the right chest. The patient died without operation two weeks later. At autopsy it was found that a pocket containing about two liters (quarts) of pus existed between the diaphragm and the liver. The appendix was gangrenous and perforated. A sinus led from its base to the pocket above referred to.

Thrombosis and Embolism after Childbirth. — SINGER (*Archiv für Gynakologie*, vol. xvi, p. 218) shows that thrombosis and embolism is an important complication of childbirth, and one which is often overlooked. He reports thirty-five instances of its occurrence. From a study of these cases the following conclusions are drawn:

1. Formation of the thrombus is preceded by an irregular rise in the pulse-rate. This rise is associated with the development of the thrombus, and the maximum is reached when the thrombus is completely formed or symptoms develop in the lungs.

2. The curve of the pulse is characteristic.

3. In a typical pulse-curve in thrombosis the pulse rises, while the temperature remains normal. It remains high until the development of edema or a palpable hard cord or symptoms referable to the lungs cause the temperature to rise. If in the next few hours or days the temperature falls the pulse still remains high for some days longer.

4. A variation from this type is found in those patients in whom other causes have produced high temperature before the development of thrombus.

5. In such cases the thrombus is apt to be an infected one, and the discharges of the patient should be carefully examined in order to ascertain the character of the infection.

6. Such examination will often reveal the presence of gonococci.

7. The good results from the treatment of thrombosis follow its early detection, hence it is of importance to note carefully the pulse-curve as well as that of the temperature.

8. Rest in bed is the most important part of the treatment. Above all things the patient must not be allowed to sit or stand up. The pulse is the absolute guide. The patient ought to be kept in bed at least three weeks after the pulse has become normal.

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SATURDAY, NOVEMBER 26, 1898.

THE last echoes of election excitement have died out, the results are definitely known, and we have all settled down for better or worse to accept those results. Most of us, we feel sure, are heartily glad that it is over. An election of to-day is associated with so much that is irritating to the feelings of intelligent citizens that one is glad to be rid of the nuisance of it all for at least another year. Verily, the methods at present employed to influence voters, the partisan clap-trap speeches, the cheap advertising dodges, the persistent appeal to prejudice and party spirit rather than to reason, the public betting, and its ostentatious publication for the purpose of influencing the men who, being sporty themselves, do not want to vote on a losing side and wait the announcement of the final odds to decide their vote for them—all this is enough to offend the intelligent voter to the soul. It forms a most interesting commentary on that palladium of our liberties, universal suffrage.

But the intelligent citizen must not permit his interest in political affairs to wane because politics is corrupt and debased; that is but to allow the present state of affairs to continue and perpetuate itself. Every citizen, and most of all the intelligent one, owes it to himself to be interested as to how he shall be governed. The doctor above all, with the influence that he consciously or unconsciously exerts in the community around him, is bound to put aside his personal feelings of repulsion for certain party methods and use the influence he possesses for what he considers the cause of good, honest government. In the profession as it is at present largely constituted, its members men of liberal education, broadened by application to a calling that teaches them "to hold nothing human as of slight consideration," with interests awakened in every phase of humanity's development and feelings rendered acute by constant contact with human suffering, there should be no lurking place for the man who selfishly neglects his duties as a citizen.

Instead of taking the place that knowledge of human needs should give it in politics, the profession is scarcely a factor to be reckoned with at all in the political arena. As a consequence, when there comes the question of reform through legislative action on some point demanded by the public health or by professional interests, medical men are scarcely listened to in the matter, their well-known tendency to shirk personal political duties being a sufficient guarantee to the politicians, as a rule, that the neglect of their petitions will be followed by no political consequences. To follow the selfish policy of avoiding all trouble by letting politics severely alone is not compatible with the duty the medical man owes to himself, his profession, and to his government. Every physician should, on the contrary, be the center of a circle of political influence that makes for what is best in local and general government. To fail to be such is to fall short of the mission that has fallen to the profession of later years, that of making human life more livable and its environment better calculated to foster the proper evolution of the race. This is a mission the signs of whose fulfilment are all around us at the end of the Nineteenth Century, in the pregnant influence of medical men in psychological questions, in the problems of sociology, in all educational matters as well as in their more proper field, the care of public health.

THE result of the secondary elections for the Prussian legislature in Berlin have just been an-

nounced, and the Social Democrats (Radicals) have made large gains. Among the members reelected by the radicals is Professor Virchow, the pathologist, who, despite his advanced age, nearly seventy-eight, still retains his interest in governmental affairs. Ever since his investigation of the conditions existing among the poor people in Silesia during an epidemic of typhus that raged there some fifty years ago, he has been an uncompromising Social Democrat, an intense advocate of popular rights. His attitude in politics threatened at one time to interrupt his scientific career, and he was compelled to resign his position as prosector of anatomy at the Charité Hospital, Berlin. He received shortly after, however, a call to the professorship of pathologic anatomy at Wurzburg, and six years later came back to Berlin in triumph as Professor of Pathology. He could then afford to have political opinions, and though it has deprived him of decorations, titles, and honors which would have been heaped upon him, he has clung firmly to the principles he adopted in the enthusiastic philanthropy of his younger days. Ever since the advent of the present emperor it is said that it has been hinted to him that the title of excellenz would follow a modification of some of his radical political views. The hint missed its purpose.

Despite his years, Virchow is a most faithful attendant on the legislative sessions, is listened to with a great deal of attention, and his opinions on medical and scientific questions carry the greatest weight. Though his lectures at the Charité begin in summer at 7 A. M. and at 8 A. M. in winter, it is not an unusual thing for him to be at the legislative rooms for a night session or on committee work until midnight or later, and yet be ready for his work next day. He is a true type of the great medical scientist. His scientific work has never drawn him away from the great interests of humanity, but on the contrary the reputation and influence gained in science have been used to help on the solution of difficult social questions now so pressing everywhere.

THE course pursued by President Dwight of Yale University in proffering his resignation because he has reached the age of seventy has our hearty approval. He considers that men at seventy are, as a rule, unfitted for the manifold duties that devolve upon a university president. He is himself a striking proof of the fact that there are some notable exceptions to the rule, and that some of the septuagenarians have the vigor to properly apply the immense practical experience with which a long life has furnished them. It is from men like him, however, that the example of laying down the burden at the seventieth year comes with the best grace, and will have the most forceful effect in inviting imitation. Very, very few men are capable of fulfilling responsible university positions whether in administrative or teaching lines after this age has been reached. Too often men continue to occupy them to the serious detriment of the university, making the position of faculty and trustees in the matter a most difficult one. Every step then that tends to the establishment of the custom of voluntary retirement at seventy is a welcome one. American universities have not been so much hampered by difficulties in this matter as have educational institutions abroad, but it is only a question of time until they will be face to face with it, and then a tradition such as President Dwight's example inculcates would be a most precious heritage.

Meantime President Dwight's services are too valuable to be dispensed with, and now that the example of his action will have its force, we sincerely hope that the trustees of the university will succeed in their efforts to retain him as the guiding spirit of the institution or at least have the advantage of his counsel and cooperation until the bicentenary celebration of 1901.

May we join with the many sons of Yale in expressing our best wishes for many years of usefulness for the Patriarchal President, whose living words and far-seeing acts have done so much for a great university and for the cause of education in our country. *Ad Multos Annos!*

OUR London correspondent comments in last week's issue of the MEDICAL NEWS on a typically *fin-de-siècle* exposure that took place recently with regard to the sale of supposedly abortifacient remedies. Some one got hold of the names of the parties who had sent to a certain concern for "Lady Montrose's Miraculous Female Tabules," advertised as an infallible remedy for "delayed menstruation from any cause," etc. Typewritten let-

ters were sent purporting to be "official," announcing to each of the customers of the Montrose concern that legal proceedings had been commenced against them for "the fearful crime of preventing or attempting to prevent birth." Arrest was to follow unless the party would "promise under oath as before God," never, *never* to attempt the crime again and send the writer two guineas for the legal steps necessary to quash the proceedings. The bait took marvelously well in most cases, but before the swindler could land his fish the police, put on the track by some more strong-minded individuals, swooped down on his office. More than 600 letters were captured, each containing the two guineas demanded.

The whole affair is a startling commentary on the character of the advertisements that even respectable journals admit to their columns. Even so-called religious journals are not above it, and some of the confessedly guilty ones in this case admit having sent for the remedy because they saw it advertised in a religious journal.

Meantime, there is a feature of the case that the English medical journals do not touch upon. These letters of confession are in the hands of the authorities. Every one who sent the two guineas evidently confesses that her idea in taking the miraculous tabules was to commit what her correspondent designated as "the fearful crime of preventing or attempting to prevent birth."

This is a felony before the English law. Will the letters be used to prove this and the confessed criminals be brought to justice, or will the police compound a felony and permit the affair to drop out of sight? In other words, does the statute on the English statute-books in this matter legally mean anything or nothing? We are very much interested in knowing the final outcome of the case.

DESERTED CITIES OF THE FUTURE—BOMBAY AND MADRAS.

How serious a matter the present outbreak of bubonic plague in India is considered to be, may be gathered from the above expression which forms the title of the leading editorial in a recent number of the *Indian Medical Record*. Bombay has been in the death-grip of plague since August or September, 1896, and has now entered upon the third epidemic. It is estimated that 398,000 people fled from Bombay during the period beginning October, 1896, and ending February, 1897. Familiarity with the disease has bred among the remaining inhabitants a certain disregard for its dangers and so the exodus upon the outbreak of this last epidemic does not compare in extent with what occurred in the preceding years. It has, however, proven a serious drain upon the city's population. Moreover, the intervals between the epidemics have been so short that many of those who fled before have not dared to venture back.

Behind it all, as the editor of the *Indian Record* says, is the awful insanitary condition of the city. Despite the well-directed efforts of English sanitarians and the expenditure of immense sums of money, extending over a long period of years this condition of affairs has developed: the subsoil water of Bombay has been steadily rising at the rate of about eight inches each year. Eleven years ago it was twelve feet below the surface; this time last year it was only four. Two causes have contributed to this event; first, drainage originally insufficient, and second, the introduction of a plentiful water-supply without proper sewerage facilities for carrying it away. By being allowed to accumulate upon the surface of the ground and saturate the soil, an abundant supply of pure water instead of being an unmixed blessing has proved a veritable curse. The bankrupt condition of the treasury due to the long business stagnation gives no hope of prompt relief from this underground culture-bed of infection which must sooner or later destroy or drive out the last inhabitant.

SODIUM BICARBONATE BY INTRAVENOUS INJECTION AS A PREVENTIVE OF DIABETIC COMA.

OUR esteemed contemporary the *New York Medical Journal*, in a recent issue, gives the principal place in its editorial columns to an article bearing the above title. As the subject is not a new one we may be permitted a few additional comments upon it so as to round up its present status for the benefit of the busy practitioner.

The theory of treating the acid intoxication, supposed to be the cause of diabetic coma, by alkalin infusions into the circulation originated with Stadelmann in Naunyn's clinic at Strasburg, and was first put into practice by Naunyn himself. He seemed

at first to attain some measure of success, and on the strengh of his recommendation the method was thoroughly tried in most of the large European clinics but, almost without exception, unsuccessfully. It was then suggested by the Strasburg school—Naunyn, Minkowsky, Stadelmann—that it was not in the fully developed coma but in its preliminary stages, before the accumulation of acids in the blood and tissues became too great, that alkalin treatment would be serviceable. That was some years ago, but the results have not been encouraging. Eichhorst, in the fourth volume of his "Specielle Pathologie und Therapie," 1897, says: "Certainly, if these infusions have ever done any good in counteracting a supposed acid intoxication they have never been effective for any length of time." Professor Gerhardt, whose reaction is supposed (we say supposed because Van Noorden denies it any significance in the matter) to indicate the presence of the toxic acids in the urine which result from the toxic acidemia, has never seen the alkalin infusions do the slightest good. The subject has been one of special interest to him, yet as reported in our Berlin letter [MEDICAL NEWS, April 4, 1898] he did not think these infusions had ever lengthened life by an hour, or given a single additional moment of consciousness. That this decided opinion would not have been expressed unless the remedy had been tried in all stages of the coma and especially at the beginning of it, any one who knows Professor Gerhardt's thorough clinical methods and his large clinical material will never doubt for a moment.

Professor Van Noorden, in his book on diabetes, published this year, expresses his utter lack of confidence in the alkalin infusions for the relief of any symptoms due to the toxic acidemia. Finally, Professor Naunyn himself, confesses in his book on diabetes in the series, "Specielle Pathologie und Therapie" edited by Nothnagel, June, 1898, that the alkalin infusions have not had the success that the theory of their introduction promised. He even admits that any good effect they may have had was perhaps due to the "exciting influence of the infusion" and cites an old case of Hilton Fagge's in which an *acid* infusion had had precisely the effect claimed for these latter-day alkalin infusions when first introduced.

The *Journal's* editorial is founded on two cases of Lépine, one of which was surely known to Naunyn when he wrote, for Lépine's work in diabetes has for years been along similar lines to that of the Strasburg school, yet he attaches no importance to it. Naunyn himself evidently tried the alkalin infusions at all stages of the coma and has given them up. He now uses large doses, ½ ounce to 1½ ounces of bicarbonate of soda by the mouth or rectum, sometimes with good results. Lépine has added considerably to our knowledge of the functional pathology of diabetes, but has not been fortunate in the recommendation of methods of treatment. He was one of the very few clinicians in Europe, outside of Strasburg, who saw any good come from alkalin infusions given at the height of diabetic coma. His claim of benefit from pilocarpin as a pancreatic stimulant in diabetes was not confirmed by others. It would seem then that no great weight should be attached to his conclusions in the present instance.

ECHOES AND NEWS.

The Sternberg Hospital. — The Sternberg Hospital at Camp Thomas, Chickamauga Park, was closed November 14th. The twenty-eight patients in the hospital were sent to Fort Thomas, Ky., and the medical corps transferred to the hospital at Savannah.

Professor R. H. Crittenden of Yale College. — Professor R. H. Crittenden has been appointed to succeed Professor Geo. J. Brush, who has recently resigned his position as Director of the Sheffeld Scientific School, and accepted an appointment as Professor Emeritus.

A Woman Medical Inspector.—Dr. Mary H. Murray has been appointed by the New York Board of Health medical inspector of the twelve public schools in the third ward of the Borough of Queens, New York City. Dr. Murray is a graduate of the Woman's Medical College of the City of New York, and served as interne in the hospital and dispensary for one year. She is the first woman honored with an appointment on the staff of school inspectors.

Faculty Appointments at the New York Polyclinic.—Dr. Charles H. Chetwood has been promoted from the position of adjunct-professor to Professor of Genito-urinary Surgery. Dr. Chetwood has recently been appointed visiting-surgeon to Bellevue Hospital. Dr. Frederick Whiting has been appointed Professor of Otology, to fill the vacancy caused by the resignation of Professor Sheppard. Dr. Whiting is visiting-surgeon to the New York Eye and Ear Infirmary.

Health of Troops in the Philippines.—The number of cases of sickness reported from Manila for the week ending

November 12th was 1816 as against 1894 the previous week. Of these 124 were typhoid, 608 malaria, 95 dysentery, 184 diarrhea, other intestinal troubles 42, gastric fever 19, wounds and injuries 79, heat 3, smallpox 39, including 6 Spaniards; all other sicknesses 610. The deaths were: typhoid 1, meningitis 2, dysentery 1, purpura hemorrhagica 1, smallpox 1.

Some Observations During Human Cremation.—It has been found that fat people burn more easily than thin, and women who have died in childbirth are most easily cremated, while persons who have died of consumption require more time and more fuel than any other class of cases. These observations were made in Japan, where the fuel used is fire-wood, placed directly in contact with the body. On an average about seventy-five pounds of wood is required for each complete cremation.

A New Weekly Medical Journal.—The *Indian Medical Record*, which originally appeared as a monthly, has been issued for some years every two weeks, and now proposes, if its subscribers will substantially support it in the change, to become a weekly. India has so far had no weekly medical journal; there would seem to be a field for this venture. The *Indian Medical Record* is thoroughly representative of what is best in medicine in the Far East. It deserves the success that its present proposal indicates.

Columbia Medical Students Forbidden to Smoke in the College Buildings.—President Low of the Columbia University has issued an order approved in a meeting of the Faculty of the College of Physicians and Surgeons, prohibiting smoking or spitting about the corridors or in the rooms of the buildings, except in the retiring-room and a designated part of the dissecting-room. The majority of men who smoke expectorate, and as this is now regarded not only as a filthy habit but as one which encourages the spread of disease, the new order will doubtless work a favorable reform in the habits of the medical students.

Antivivisection and Congress.—The scientific societies of Washington have recently held a joint meeting and passed resolutions calling the attention of scientists and the medical profession to the fact that a meeting of the American Humane Society will be held in Washington during December next for the purpose of reviving interest in the Antivivisection Bill now pending in the United States Senate, and urging upon the individual members of the medical profession the importance of personal letters being sent by them to their respective senators and representatives protesting against the bill.

The Health of the Army at Honolulu. — The conflict of authority between the local Board of Health and the Army officers on account of the insanitary condition of the camps has continued, the city authorities threatening to quarantine against the camps unless their condition was corrected. Fortunately, the camps were abandoned to time to prevent serious trouble. General King, who was ordered to conduct his troops from Honolulu to Manila placed them on shipboard but decided to wait three days before starting out, fearing an epidemic might arise during his voyage and compel his return. Later accounts announced that several cases of typhoid fever had occurred on board the ship, and that she had been placed in quarantine.

A Microbe-Proof House at Yokohama.—An eminent German bacteriologist has recently erected at Yokohama a microbe-proof house, built of glass blocks. There are no window sashes and the doors, when closed, are air-tight. The air-supply is forced into the room through a pipe and filtered through cotton wool to cleanse it of bacteria. To insure further sterilization the air is driven against a glycerine-coated plate of glass, which captures all the microbes the wool spares. The few microbes brought into the house in the clothes of visitors soon die in the warm sunlight with which the house is flooded. This affords a constant sunbath during clear days, and is a valuable suggestion to those personally interested in the sanitarian treatment of phthisis.

A Doctor Prosecuted.—The President of the New York Board of Health has preferred charges against a local physician for failure to report a case of diphtheria until after the death of the patient, and requested the corporation counsel to begin suit for $50 damages provided for in the Code. It is also alleged that in the doctor's death certificate the fatal result was ascribed to heart failure following undue exertion, although his letter incidentally stated that his patient had been ill with diphtheria from which he had recovered five days previous. The considerate and just treatment accorded by the Board of Health to cases of contagious diseases should put at rest any fear on the part of the attending physician regarding the consequences of proper notification, and be an incentive to prompt and ingenuous action in accordance with the requirements.

Ablation of the Spleen.—Jonesco of Bucharest read October 25th, before the Paris Academy of Medicine, a paper in which he reported twenty-nine cases of ablation of the spleen, from which he drew the following conclusions: The good results obtained by the ablation of the spleen of patients suffering from malaria confirm the opinion of Laveran, namely, that the spleen instead of being an organ of protection against malaria, is the receptacle of the hematozoa, from which the hematozoa are thrown into the blood. Therefore, to amputate the spleen is to remove the principal seat, if not the only one, of chronic malaria, and cure that disease. Consequently, the removal of the spleen must be performed as early as possible to prevent the formation of adhesions and cachexia, which would make the operation more serious, if not impossible. Leucocythemia in these cases is the only contraindication of the operation.

The Sixth International Otological Congress.—The Sixth International Otological Congress will be held in London, August 8, 9, 10, 11, and 12, 1899. President, Dr. Urban Pritchard, Professor of Otology at King's College, London. The meetings will, by permission, be held at the Examination Hall of the Royal Colleges of Physicians

and Surgeons, Victoria Embankment. The subject chosen for special discussion is "Indications for Opening the Mastoid in Chronic Suppurative Otitis Media." A large and influental British organization committee has been formed, the treasurer being Mr. A. E. Cumberbach, 80 Portland Place, London, W., and the honorary secretary, Mr. Cresswell Baber, 46 Brunswick Square, Brighton. The International Otological Congress, which assembles every four years, met last in Florence, where a very successful gathering was held under the presidency of Professor Grazzi.

Mt. Sinai Hospital.—Since 1872 the Mt. Sinai Hospital, New York, has occupied its present quarters at Sixty-sixth Street and Lexington Avenue. For more than ten years the present structure has proven inadequate to the demands made upon it, and a year ago the directors of the hospital decided to build a new and more modern structure. A site was purchased on Fifth Avenue, embracing the entire square bounded by One Hundredth, One Hundred and First Streets, Madison and Fifth Avenues, with the exception of three city lots. Voluntary subscriptions are sought to defray the cost of the buildings, about $350,000 having been collected up to this time, we are informed. It is proposed to spend twice this sum for the building, which is to be equipped as a modern scientific hospital in the fullest sense of this term. Ground will shortly be broken, and it is expected that the new hospital will be occupied by 1900.

American Fruits Free from Dangerous Infection.—The Agricultural Department at Washington has recently completed a series of experiments which prove the falsity of the claims made by several European governments upon which American fruits have been excluded from their markets. These governments shut out American fruits on the charge that they were infected with what is called the "San José scale." The experiments of the Department of Agriculture have been most minute and careful. Large lots of peaches, pears, and apples infected with the "scale" have been tested by all known methods of commercial drying, sun drying, by evaporation, by using sulphur and without, with the result that each of these processes destroys the life of the "scale." It has also been demonstrated that the "scale" does not destroy the flavor of the fruit, and is perfectly harmless when taken into the human stomach. The presence of the "scale" may be recognized by a very small, dark spot on the fruit, growing in size as the "scale" multiplies.

SPECIAL ARTICLE.

YELLOW FEVER AT SANTIAGO.[1]

SIR:—Pursuant to your instructions of August 20, 1898, to proceed to Santiago de Cuba, for the purpose of testing the serum in suitable cases, both as a curative and as a prophylactic agent, I did so at my earliest opportunity, arriving in that city on August 25th. Consultation with the military officials of our Government in command convinced me that the rumors prevalent in the United States of the malarial character of the prevailing fever at Santiago rather than yellow fever was correct. The officials of the city declared that there was no yellow fever in Santiago; therefore, I refrained from visiting the city hospitals, because of the consumption of time, and the inadvisability of a difference of opinion as to diagnosis in any possible cases seen there. However, the surgeon-in-chief of the military commandant of the province of Santiago assured me of the presence of the disease, as reported to him by his subordinate officers, and gave me *carte blanche* to enter the hospitals at both Siboney and on the island in the bay set apart for the purpose of a yellow-fever camp. Owing to the rapidly progressing discontinuance of the camp at Siboney, I took up my residence at the island hospital. A careful scrutiny of the number of convalescents there, and an inspection of their clinical histories, especially in regard to the pulse and temperature tracings, convinced me that, while there was, in numerous cases, a condition resembling yellow fever, yet the pulse and thermographs did not fulfil the demands as enunciated by J. C. Faget[1]; that, while the pulse-tracings were generally low there was an absence of the typical "want of coordination" seen in an *ascending* or *stationary* fever at its acme, together with a *falling* pulse. There was much food for reflection, and I was finally convinced that in all of these cases, showing an intermitting type of fever, and most of them an enlarged spleen and tender liver, a malarial intoxication was present. Yet could the slow pulse, spongy gums, yellowish (not pronounced) skin and eyes, skin extravasations, depend upon yellow-fever infection? I had reason to question the statement of "albumen in the urine" in some cases, since I was led to doubt the competency of the analyst. A continued study of these facts and of the cases arriving of so-called yellow fever, led me to the conclusion that the *ensemble* of symptoms which had been so freely thus diagnosed was due to a very general condition of incipient, or developing scorbutus, upon which there had become implanted a malarial toxemia. To me this seemed to develop a condition of serious danger but little inferior to yellow fever itself. At no time did I see a case which warranted the use of the curative serum, since the enlarged spleens and other evidences of malarial infection, even if I had accepted the dictum of those in charge of the hospital, would, under Sanarelli's direction, have gone far to negate the results of its use. Under such circumstances I deemed it my duty to acquaint you with the conditions existing, especially since I had before visiting this hospital and examining the patients, reported to you the favorable opportunities to fulfil your wishes in regard to this serum as it was presented to me by the authorities.

In differing from the opinion of the officials of this hospital, I must express my grateful appreciation of their uniform courtesy to me at all times, and of the interest

[1] Special report from advance sheets of the U. S. M. H. S. report upon the effort to test in suitable cases the "serum anti-amarylic," donated to the United States by Professor Sanarelli of the University of Montevideo, Uruguay, with the request that it be tested at the earliest opportunity in suitable cases of yellow fever.

[1] "Monographe sur le type et la specificité, de la Fiévre Jaune," 1875.

there was manifested in the work committed to my charge.

It is but right to say that every official courtesy was extended by Generals Lawton and Wood, and especially by Colonel Havard, the surgeon-in-chief of the military forces occupying the province of Santiago de Cuba.

Respectfully yours,

EUGENE WASDIN,
Surgeon, U. S. M. H. S.

CORRESPONDENCE.

"UNITED STATES HEALTH REPORTS AND CARRIER, M.D."

To the Editor of the MEDICAL NEWS.

MY DEAR SIR:—Your magnificent and refreshing editorial in the MEDICAL NEWS of November 12th upon the sheet bearing the pretentious title "United States Health Reports" and its contents I have read with pleasure. I believe that the profession in general should be particularly grateful to you for your elaborate dissection of the expressions used by the author of said article, and the concise explanation of its true meaning.

Yours truly,
W. STEVENS, M.D.

70 WEST FIFTY-SECOND STREET,
NEW YORK, November 15, 1898.

THE PROPER USE OF OBSTETRIC FORCEPS.

To the Editor of the MEDICAL NEWS:

DEAR SIR:—I have read with great interest the article published in your journal of October 22nd on "The Use of Obstetric Forceps, with Report of Two Cases of Inversion of the Uterus." Many valuable practical points were given by the writer in the use of forceps, and certainly too much cannot be said or written on this very interesting topic. But there are several thoughts expressed by the author of the paper with which many obstetricians will not agree. A few of these are of so much importance that a little time and space can well be afforded them.

The writer says among other things: "Some authors advise the removal of the forceps before the head is delivered and as soon as you can grasp the chin with the index-finger in the rectum, but I prefer to leave the forceps adjusted until the delivery of the head is completed." In preference to the method of introducing the finger into the rectum (a procedure which, to my mind, is never necessary, and which should be for lack of cleanliness carefully avoided) I also would choose to leave the forceps adjusted until the head is born, but is it not better to remove the blades before the birth of the head? I believe that for several reasons the forceps should be removed at the moment when it becomes evident that the labor can be completed without them. In other words, when the vulva and perineum are well on the stretch, when the head between pains recedes but little, and when the head can be lifted up by the hand, pressing upward upon the forehead through the soft parts, the head can be delivered more carefully and with less likelihood of perineal laceration than when the forceps are left in place. Experience is necessary in order to judge with accuracy the precise moment at which the blades can be removed, but to my mind the operator in gaining the knowledge of technic will get better results by removing the blades a little too early than to keep than in place too long. By delaying the removal, he may, and often does, lacerate the perineum, when such rupture could easily have been avoided. If removed too early it will be an easy matter to replace them and advance the head sufficiently to be able again to remove them.

During the latter part of delivery, especially in cases where the pains, in spite of the chloroform, cause rapid advance, the head can be controlled far better with the hands than with the instrument. The blades, too, take up room at the outlet, and there are cases in which the perineum will stretch sufficiently to allow the head to pass, but which will be torn if put further upon the stretch by the additional thickness of the blades. But the chief objection to leaving the forceps applied is that already stated, namely, that the head can be controlled better and a more careful delivery made when the blades have been removed. In primiparæ, this is particularly true and of great importance. During the removal of the blades the head must be controlled by the hand, or at an unexpected moment advance may be rapid enough to complete delivery, not to our satisfaction because of laceration that might have been avoided. In an experience of several hundred forceps cases I have seen a number in which laceration occurred during the few seconds required for the removal of the blades where, by a careful appreciation of the fact that resistance had been almost entirely overcome and that a moderately strong pain would therefore advance the head rapidly, a laceration would have been avoided.

In the treatment of occipitoposterior positions, I must disagree with the writer, who says, "In cases of occipitoposterior position it is always best to refrain from using forceps as it prevents rotation, yet where speedy delivery is required, it is best to apply forceps to the sides of the head, and to imitate the mechanism of normal labor in posterior positions. If the sagittal suture occupies an oblique diameter, the forceps should be applied in the opposite oblique, as the occiput should be rotated into the hollow of the sacrum." The writer then says that the lines of traction are the same as in the ordinary vertex presentation, only the face rotates under the arch. All will agree, I think, that the use of forceps in cases of posterior position should be avoided until it is evident that Nature can accomplish no more, or until the condition of the mother or child requires it. Oftentimes, several hours are required to complete flexion and cause rotation to occur, and, therefore, it is well to give the natural forces time in which to operate, even if action is slow. But, when advance ceases or where, for some reason the welfare of the mother or child demands it, it becomes necessary to use forceps let us imitate the mechanism of normal labor by causing rotation to the front, not into the hollow of the sacrum. The great majority of cases

of occipitoposterior position terminate by rotation and therefore that course must be taken as the normal. Therefore, rotation should be attempted with the forceps, provided of course the head be low down in the pelvis. This is a condition which must be complied with, for rotation in the middle of the pelvic cavity is often difficult and much more dangerous to the soft parts. If the head is still high up, it should be brought well down to the outlet, where flexion can be increased with the forceps, and where there is more room in which to rotate. Having brought the head well down, so as to distend the perineum well, rotation can, as a rule, be easily accomplished, great care being taken that the head be held firmly, that the tips of the blades are not allowed to lacerate the soft parts, and that the fingers of one hand be placed upon the head (to indicate amount of turning) while rotation is performed by the forceps in the other hand. Straight forceps are excellent for such cases, but the forceps with the pelvic curve are safe, provided the operator keeps in mind the direction in which the tips of the blades are moving, and operates slowly and carefully. Failing to succeed in the rotation, the head should be brought still further down and the effort repeated. Careful attempts to rotate should certainly be made, for there is greater danger of rupture of the perineum, should the head be brought though in the posterior position. If in any case the head cannot be made to rotate, delivery, of course, must be made in the posterior position.

One point which must be emphasized is, that after the head has been rotated, it must be held in the anterior position until the uterus has relaxed sufficiently to allow the body to turn also. The amount of rotation should be not more than 90°, for that is sufficient, as a rule, and there is no danger of twisting the child's neck. Nature will aid very greatly in the rotation, provided a little assistance be given at the outset.

It is safer also to apply the forceps for the purpose of rotation in the same manner as for an anterior position, reapplying the blades after the turning is accomplished.

Only expert operators should, I believe, apply forceps in the "inverted" manner spoken of by some authors. In breech-presentations the forceps should be used only in those cases where the delivery of the after-coming head can be slowly and carefully made, and, therefore, in cases where efforts to deliver the head by the ordinary methods have failed. The child being dead the remainder of delivery can be slowly completed, either with the forceps or cephalotribe.

Manual methods of traction aided by expression are far better than instruments for the delivery of the after-coming head, and delay here for the application of forceps would be a dangerous one.

We agree with the writer perfectly when he states that "in the early use of forceps and with proper precautions, they will be hailed as a welcome boon to the woman in labor."

GEORGE L. BRODHEAD, M.D.
60 WEST FIFTY-EIGHTH STREET,
NEW YORK, November 17, 1898.

OUR PHILADELPHIA LETTER.

[From Our Special Correspondent.]

WATER-POLLUTION AND ITS PREVENTION BY STATE CONTROL — A POLICE CRUSADE—THE PENNSYLVANIA INSTITUTION FOR TEACHING THE BLIND—CASTOR-OIL POISONING—MEMORIAL SERVICES TO DR. PEPPER—CASES PRESENTED TO THE PATHOLOGICAL SOCIETY — A PHYSICIAN CENSURED—HEALTH-BOARD STATISTICS.

PHILADELPHIA, November 21, 1898.

WHILE City Councils are dawdling over various schemes for the filtration of our water-supply, and the local community continues to sit with folded hands, doing nothing, saying nothing, the State Board of Health is not only arousing public sentiment but taking active steps to overcome the pollution of the various streams of the State. Dr. Benjamin Lee, secretary of the Board, in his annual report declares that the typhoid fever existing in Philadelphia can be directly traced to the pollution of the Schuylkill, and suggests that a law be passed by the next Legislature giving the State Board of Health direct control over all water-supplies and the appointment of wardens whose duty it shall be to patrol the streams and report violations of the law.

The arrest of a fortune-teller, whose supposed revelations of the future had driven her client insane, has started a crusade against this class of individuals, and many "faith-curists," "magnetic-doctors," and the like will probably find themselves within the meshes of the legal net before the rounding up ends. It seems a pity that the law cannot go further and arrest venders of "female regulators," "No. 7 specific," etc., who advertise most brazenly in the newspapers to secure by means of drugs that, which in law, is considered a criminal operation. Perhaps when the millennium comes Mr. Munyon, who is now filling our drug-store windows with a horde of uniformed employees, using atomizers and other nauseating toilet articles before the public, will also fall into the clutches of the police for obtaining money under false pretences.

The Pennsylvania Institution for Teaching the Blind, at Overbrook, will be formally opened next month. The building, which has been in the course of construction for eighteen months, is three-stories high, with a frontage of 300 feet, and two wings extending about 320 feet. Besides this main building there are detached buildings for the hospital, kindergarten, and the residence of the superintendent.

A case which was puzzling for the reason that the cause of death was not discovered until the coroner's inquest occurred this week in a child aged four years. The child was taken suddenly and violently ill, and died within a short time, the father stating his belief that some beans which the child had taken from an uprooted plant in a vacant lot had poisoned her. Upon investigation it was found that the beans were taken from a castor-oil plant, and that they had caused an acute nephritis from their poisonous and irritating action. Several other children in the same neighborhood were made very ill, but no other casualities beyond the one mentioned have been recorded thus far.

On Tuesday evening, November 29th, a meeting will be held in the chapel of the University of Pennsylvania in memory of the late Dr. William Pepper. The arrangements are in the hands of a joint committee representing the University, the American Philosophical Society, the Franklin Institute, the Academy of Natural Sciences, and other city institutions, and representatives of most of these institutions will deliver short addresses. Governor Hastings, as President *ex-officio* of the Board of Trustees of the University, will preside, while Dr. S. Weir Mitchell, on behalf of the Board of Trustees, will make the first address of the evening. Dr. Tyson will deliver an address as representative of the medical faculty, and among others who will speak are Frederick Fraley, W. P. Wilson, John Thomson, Mayor Warwick, General I. J. Wistar, Daniel Baugh, and Hampton L. Carson.

Dr. J. H. Jopson presented specimens of an epithelioma of the penis and an osteosarcoma to the Pathological Society last week. The epitheliomia was removed from a man aged fifty years, and had encircled the meatus, extending up along the spongy body. The osteosarcoma was removed from the right pectoralis major muscle of a boy, and was secondary to an osteosarcoma of the clavicle, which had been removed sixteen months previously.

Drs. George E. de Schweinitz and J. D. Steele presented several tumors of the eye, one of which, a carcinoma of the choroid, was secondary to an operation performed six months previously for removal of the breast for carcinoma.

Dr. J. M. Swan showed a specimen illustrating an anomalous position of the cecum which was situated in the umbilical region. Dr. Hare spoke of the frequency of similar conditions and the importance of their recognition in diagnosis, while Dr. Coplin said malposition of the intestines was very frequent in the insane.

At an inquest held by Deputy Coroner Dugan this week a physician was severely censured for not reporting a case in which there was a decided suspicion of malpractice. A young woman died of peritonitis after having been attended by a medical student on several occasions, and while it was impossible to fix the guilt upon the latter, the coroner said his convictions were decidedly opposed to those of the jury who acquitted him, and he regretted his inability to hold the student for the Grand jury.

The total number of deaths occurring in Philadelphia for the weeking ending November 19th, as reported at the Health Office, was 414, of which 116 occurred in children under five years of age. The total number of new cases of contagious diseases was 227, reported as follows: Diphtheria, 114 cases with 23 deaths; scarlet fever, 17 cases with 2 deaths; typhoid fever, 96 cases with 9 deaths.

For Persistent Diarrhœa in Children.—

℞ Argenti nitratis . . . . gr. i
Ac. nitrici dil. . . . . gtt. v
Mucilag. acaciæ } aa . . . ℥ ss.
Syr. aurantii }
M. Sig. One teaspoonful every three or four hours.

OUR LONDON LETTER.

[From Our Special Correspondent.]

THE GROWING USE OF ANTISEPTICS IN ARTICLES OF DIET—MEETING OF THE BRITISH GYNECOLOGICAL SOCIETY—DISCUSSION ON METHODS OF SUTURING AFTER ABDOMINAL SECTION—THE OPEN-BOWEL TREATMENT—A SCHOOL FOR CLINICAL INSTRUCTION IN TROPICAL DISEASES.

LONDON, November 11, 1898.

A GOOD deal of alarm has been awakened here in both medical and lay circles during the past few weeks over the wide and increasing use of aseptics and antiseptics of various sorts in articles of diet under the title of "Food-Preservatives." For obvious reasons they are particularly common in milk and butter and a few days ago Dr. Winter Blyth, health-officer to the Marylebone Vestry (one of the ancient "parish" divisions of London) reported the discovery among some samples of milk he was testing of a lot containing five grains of boracic acid to the pint.

The use of such antiseptics appears to be much more frequent here than in America as yet, for it is a common thing to see a row of these food-preservatives occupying a prominent place in the drug stores, with full directions for use. Boracic and salicylic acids and solutions of formalin seem the chief favorites. Fortunately, most of these are considered comparatively harmless in the amounts which can be used without affecting the taste of the food, but as articles of diet there are grave objections to them, especially as nothing is known of the effects of their continued use. The most serious objection to the custom, however, is that dairymen relying upon them, will come to disregard proper precautions as to cleanliness of milking, of the storing, and of the vessels, and thus permit the contamination of the milk by ptomains, germs, or toxins against which these "parlor antiseptics" are, practically, of course, absolutely inert.

At the last meeting of the British Gynecological Society after the exhibition of specimens recently removed, the discussion of Christopher Martins' paper "Some Moot Points in the After-treatment of Cases of Abdominal Section," adjourned from the previous meeting, was taken up. As the paper had in the mean time been printed and a copy sent to each member, the discussion had a full-bodied, partisan flavor, in the impromptu "discussion-limited-to-ten-minutes" debate but it also had the disadvantage of being rather long. Each member had brought his copy, with the strategetic points of attack marked in pencil, and the result was that the only other paper of the session was, from lack of time, shelved in its turn for discussion at the next meeting. This method certainly increases the sufferings of the writer, but is probably better for the subject. From the opinions expressed well-nigh every point in the after-treatment appeared to be a "moot" one. Martin had advocated single-line sutures of silkworm-gut, McNaughton Jones, and Jessett preferred the triple set, but disagreed as to the peritoneal row, the former using silk, the latter catgut, both regarding ventral hernia or strain after vomiting as less liable to occur after this method. Bantock advocated the

single suture and thought stitch-abscess chiefly due to too tight stitches or including too much tissue in their grip, which McNaughton Jones protested against, blaming the suture materials. Martin permitted the patient to be turned on her side by the nurse after twenty-four hours. Lawrie and McNaughton Jones kept her absolutely at rest on her back for forty-eight to seventy-two hours. Nearly all agreed in strictly limiting the patient to hot water by teaspoonfuls for twenty-four hours, but no mention was made of our method of filling the peritoneal sac or injecting the large bowel with normal salt solution to allay thirst.

Martin advised the routine use of morphin, giving the first dose before the patient was taken off the table. Lawrie objected because he had once lost a case after ¼-grain dose, and was sustained by Jessett, and the President, Dr. Jones, and Dr. Tanners, who protested against routine use.

In the management of the bowels, Jessett gave an enema upon the second day, which Dr. Tanners regarded as dangerous and preferred like Martin himself a calomel purge on the second day if symptoms demanded it, if not on the fourth day. Other speakers advocated magnesium sulphate in teaspoonful doses frequently repeated.

The new paper of the evening by Stanmore Bishop upon "Combined Abdominal and Vaginal Section in Pelvic Surgery," was a description of four cases of pelvic growths and adhesion in which the vaginal route had to be abandoned and the abdomen opened above. He discussed the general problem of the comparative advantages of the two routes, holding that far too much had been claimed for the vaginal operation, which was attended by serious difficulties and risks in a considerable and increasing minority of cases; was also liable to result in hernia and, although involving less immediate shock than the abdominal, was ultimately attended by even greater risks.

Mr. Chamberlain has just announced on behalf of the Colonial Office that a school for clinical instruction in tropical medicine will be opened for the benefit of Colonial medical officers. The Seamen's Hospital at the Albert Docks will be utilized for the school, and it is intended to collect both cases and material from the various colonies. The English authorities have learned by bitter experience as we also have during the past summer that the white man's deadliest foe in the tropics is disease, and disease often of a peculiar nature, in which Northern experience and training, however thorough, may be almost utterly useless. An important feature of the school will be well-equipped laboratories and a permanent commission for the investigation of tropical diseases, which is both more advisable and hopeful now that we are finding out that these "jungle" and "seasonal" fevers are caused not by the climate but by bacteria.

THE PLAGUE AT VIENNA.

[Special Correspondence of the MEDICAL NEWS.]

VIENNA, November 10, 1898.

VIENNA has had another experience with the bubonic plague. By the time this reaches you the general details will have been presented in your columns but the recital of a few of the more technical medical points involved may prove of interest to your readers.

The class in practical bacteriology at the Pathological Institute, of which I am a member, had as man of all work in the laboratory a certain Barisch. Early on Saturday morning, October 21st, he was taken sick with a chill and general symptoms of influenza. Dr. Ghon, the

DR. HERMANN FRANZ MULLER,
Who recently died of the plague at Vienna.

bacteriologist of the General Hospital, examined his sputum for the purpose of obtaining specimens of the influenza bacilli for demonstration to his class. Instead of finding these, however, he discovered what appeared to be attenuated forms of the pest bacillus. Drs. Ghon, Albrecht, and Müller were sent to India last year by the Austrian government for the purpose of studying the plague, the former as bacteriologist, Albrecht as pathologist, and Müller as clinician. Barisch was under the clinical care of Dr. Müller, and to him Dr. Ghon communicated

ALBINA PECHA,
The nurse who died of the plague while in attendance upon Dr. Müller.

his suspicions that the case was one of plague. The clinical appearances, however, were of pneumonia, and there was none of the signs of lymphatic involvement common to plague, so the bacillary diagnosis was not fully heeded. The pest bacillus is a slow-growing organism, and it was not until the following Wednesday, October 25th, that the cultures showed conclusively that the man, who in the meantime had died, had suffered from a genuine case

of the plague. He had grown worse so rapidly that he had been isolated, though still at the General Hospital.

Not long after the death of Barisch Dr. Müller and one of the nurses in attendance were taken ill with the disease. They were promptly taken to the Epidemic Hospital and there isolated, but both died from the infection. Several other persons who had been exposed and were slightly ill were also isolated for the purpose of observation, but only one proved to have the disease, there being three deaths in all from this cause.

Just how the original infection occurred cannot be definitely determined. Upon their return from India Drs. Ghon and Albrecht continued their studies of the disease by means of experiments on animals, a room at the Pathological Institute being set aside for their use. No one except themselves and Barisch was allowed to enter this room. Early in the present year they did a good deal of work along the special line indicated, having many animals infected with the plague, but at the time at which Barisch was infected their investigations had been nearly completed, only a few animals being in the laboratory, and on these experiments were being made to produce immunity. Barisch had been instructed as to the means of avoiding infection, and had been a very efficient and faithful assistant. Dr. Ghon had wished to immunize him, but this he had declined. Whether he finally became infected through some wholly accidental means or not can only be surmised. To support the latter theory there is the testimony of his wife, who says that while he had usually been a temperate man, of late he had been drinking heavily, remaining out late at night, and frequently coming home under the influence of liquor. This of course gives color to the supposition that while not in complete possession of his faculties he may have been careless in handling some of the infected material at the laboratory, and so become inoculated with the germs of the disease.

CATHEDRAL IN VIENNA.
A thank offering for the staying of the plague.

Vienna has had more than one sad experience with the plague, and so it is not to be wondered at that the people should take alarm that a death should have occurred from this cause in the city, and should have feared that a general epidemic was to take place. Strange as it may seem, political capital was made out of the occurrence also. Barisch died in Professor Nothnagel's clinic. While Nothnagel is not himself a Jew, he has done much to aid the people of this sect at different times, and in more ways than one has shown his sympathy for them in their unfortunate position here in Austria. The antisemetic element made this the occasion for a violent and wholly unreasonable attack upon him, certain members of the present city government, the mayor, and the official press joining to heap contumely upon him. Fortunately, this has had but little effect in lowering him in the opinion of those who know his devotion to scientific medicine. But the occurrence of the plague here has resulted in a sad blow to the Pathological Institute, as all the animals at the Institute have been killed, and among these were many completely and partially immunized against the plague. The Institute was closed at once and all clinical instruction at the General Hospital was discontinued for two weeks. Things have regained their normal tone now, however, and the clinics and laboratory work are going on as usual.

Dr. Müller was an exceedingly brainy man, and though but thirty-two years of age had made an enviable reputation for himself as a diagnostician and teacher. Public subscriptions are being made for a monument to him, and between six and seven hundred dollars has already been collected for this purpose. I enclose a photograph of Dr. Müller, who contracted the disease while in voluntary attendance upon Barisch and whose death must therefore be regarded as a sacrifice to professional duty, and the photograph of the faithful nurse, whose devotion to duty commands the same recognition. It may be interesting also in this connection to present a cut of the cathedral, erected at Vienna as a thank offering for the staying of the plague early in this century.

TRANSACTIONS OF FOREIGN SOCIETIES.

British.

FIBRINOUS RHINITIS AND THE KLEBS-LOEFFLER BACILLUS—TREATMENT OF PERSONS WHO HAVE RECEIVED SEVERE BLOWS IN THE ABDOMEN WITHOUT SIGN OF EXTERNAL INJURY—ADVANTAGES OF VENESECTION IN PNEUMONIA—LUPUS OF THE CHEEK CURED BY X-RAYS.

AT a meeting of the Royal Medical and Chirurgical Society, October 25th, LACK read a paper on "Fibrinous and Membranous Rhinitis and Its Relation to Diphtheria." This disease was described by Schuller, in 1871, as a subacute or chronic affection of the nose. It was formerly thought to be distinct from diphtheria, but more recent observers, relying on the results of bacteriologic examination, have claimed that the trouble is simply a mild form of diphtheria. An analysis of thirty-six cases showed the disease to be essentially one of children and

to occur especially in the autumn months. The chief symptoms are nasal obstruction and discharge, with excoriation of the upper lip, attended, sometimes, by sore throat. The affection lasts on the average from six to eight weeks and almost invariably terminates in recovery. Doubtless many cases, on account of the mildness of the symptoms, are never seen at all. Bacteriologic examination was carried out in thirty-three cases and the Klebs-Löffler bacillus was present in every case, sometimes alone, and sometimes mixed with pyogenic cocci, sarcinæ, etc. Its identity was proven by cultures as well as by tests upon animals. Examinations of the surroundings of patients showed that the disease is very contagious and that the bacilli may be found in the throats of healthy people who have been in association with those children. In only one instance could a previous history of diphtheria be found. The conclusion was arrived at that fibrinous rhinitis is a mild variety of diphtheria, the difference in the clinical manifestations apparently depending upon some differences in the Klebs-Löffler bacillus.

MACFADYEN said there were probably several factors in infection: (1) The properties of the bacillus, since the bacilli vary greatly in virulence; (2) the condition of the tissues; (3) the presence and virulence of associated pyogenic organisms, which, by lowering the vitality of the tissues, facilitate the entrance of the diphtheria bacilli.

LISTER had examined the nasal mucus of 125 children. The Klebs-Löffler bacillus was found in thirty-nine of them, ten of whom were free from any nasal discharge whatever. Some of the children were sent home and some were isolated in the hospital, but in no instance did ordinary diphtheria arise from these cases.

GOODALL spoke of the frequency of occurrence of the Klebs-Löffler bacillus in the sore throat of scarlet fever. He had regularly found it in a form of nasal discharge of an obstinate character which sometimes follows scarlet fever. He also called attention to the fact that when a case of true diphtheria gets into a scarlet-fever ward it often follows that none of the scarlet-fever patients contract diphtheria.

At the Medical Society of London, October 24th, SHEILD read a paper on "Four Cases of Abdominal Section for External Injury Not Accompanied by Wound." A boy aged eleven years was run over by a cab and suffered from severe collapse which did not pass off. The abdomen was opened and found to be full of blood from a rent in the mesentery. Another boy was run over by a heavy vehicle and was also in a state of collapse. His abdomen was found filled with blood and the jejunum was torn quite across. End-to-end anastomosis was done, but the patient died of peritonitis. At autopsy an undiscovered tear was found in the duodenum. In a third boy, aged sixteen, the source of the hemorrhage was found to be a rupture in the liver. Iodoform gauze stopped the bleeding easily. A woman, aged sixty, was run over and besides the resulting collapse there was bloody urine. The bladder, however, held boracic solution, and the conclusion was drawn that there was no perforation of that viscus. As the patient grew worse the abdomen was opened and the bladder was found to be badly bruised but not torn through. No other lesion could be found. Pyemic symptoms slowly developed and after death there was found an abscess in the neighborhood of the right kidney, starting from a rent in the posterior wall of the cecum.

In discussing the indications for operation in these cases SHEILD said that the diagnosis of rupture of the kidneys and bladder could usually be definitely made, but that it was often with the greatest difficulty that one could tell whether or not there was serious injury of the intestine, mesentery, spleen, liver, or sympathetic nerves. As a general rule after severe injuries of the abdomen with progressing unfavorable symptoms, exploration is indicated. The mortality of such operations is due to the gravity of the accident and most of the deaths are simply failures to save lives otherwise certainly doomed. It is of the greatest importance that such experiences should be related.

FOWLER mentioned a case in which obliteration of liver dulness had led him to expect a fatal issue in a case which he had diagnosed as perforation of a chronic ulcer. The patient recovered, however, the normal percussion-note of the liver gradually returning.

TURNER mentioned several instances of severe blows upon the abdomen without sign of external injury. He held strongly the view that in grave injury surgical exploration should be resorted to, but he reminded his hearers that in the old days such accidents were not always fatal, even without surgical intervention, as shown by the specimens in many museums of injuries of this character which had healed spontaneously.

BATTLE insisted on the importance of watching cases of abdominal contusion from hour to hour, as serious symptoms sometimes develop suddenly. He had seen one such case in which the patient, a man, after being run over, suffered no pain and was free from anxiety for four days. He then developed fever and in a few hours he was dead. Autopsy showed that there had been a contusion of the small intestine which had caused necrosis and finally perforation of the intestinal wall. The amount of shock affords little evidence as to the severity of the intestinal lesion. Indeed there are no absolutely reliable symptoms for these cases.

SHEILD said that he did not place much reliance upon percussion in abdominal contusion. The tenderness usually precludes careful percussion and even when fluid is present its presence is apt to be masked by distended intestinal coils. The disappearance of hepatic dulness might be due to intestinal distention as well as to free gas in the peritoneal cavity.

BENHAM read a paper on "The Advantages of Venesection in Cases of Acute Pneumonia," the study being based upon nineteen applications of this method of treatment. All of the cases were severe and in several of them life had undoubtedly been saved by the blood-letting. Although venesection affords relief in most cases of acute pneumonia and when performed in moderation never does the least harm, yet, as slight cases recover without this measure it is indispensable only in grave cases. The aim of the reader was to convert a severe

case into a mild one by subduing the overintensity of the morbid processes. Pneumonia is a disease the symptoms of which increase in intensity from day to day till the crisis is reached, and it is possible to check this intensity if it is progressing too rapidly, by blood-letting. A rapidly increasing frequency of the pulse and mental disturbance shown by sleeplessness and wandering are the best indications that venesection is imperatively demanded.

FOWLER said that it is half a century since antiphlogistic theories have been laid aside and that while it is possible that the pendulum has swung too far in the other direction, and while he was willing to admit that venesection could be of service in distention of the right side of the heart, as occurs in chronic bronchitis with emphysema, he was not ready to admit that it was a desirable treatment in pneumonia.

At a meeting of the Liverpool Medical Institution, held October 20th, HOLLAND exhibited a boy, aged ten years, who had suffered from "Lupus of the Right Cheek," which he had treated by the X-ray, eighteen exposures, with the result that the ulcer had entirely healed. The scar was supple three months later and there was no sign of a recurrence. For five years previously the lad had been treated by scarification and cauterization and in many other ways without apparent benefit. He thought the risk of dermatitis from the X-rays has been much exaggerated. He had used it 700 times and had never observed any ill effects from it.

TAYLOR had treated with X-rays two cases of lupus of the face without good result. In a third patient whose lupus was complicated by a corneal ulcer, an inflammation of the eye had been caused by the exposures to the X-rays.

REVIEWS.

THE MEDICAL NEWS VISITING-LIST FOR 1899. Weekly (dated for 30 patients). Monthly (undated for 120 patients per month). Perpetual (undated for 30 patients weekly per year). Perpetual (undated for 60 patients weekly per year. Philadelphia and New York: Lea Brothers & Co., 1898.

THIS well-known Visiting-List barely needs description at our hands. It is issued this year in the same handsome wallet-shaped form as heretofore. The work gives printed data of a valuable and useful kind, such as a table of remedies alphabetically arranged, a table of doses, notes for examination of the urine, poisons and their antidotes, incompatibles, artificial respiration, a diagnostic table of the eruptive fevers, and a full-page plate showing the incisions for the ligation of the various arteries. This Visiting-List embraces features peculiar to itself of decided value, and is issued in styles intended to meet the wants of all practitioners.

A MANUAL OF OTOLOGY. By GORHAM BACON, A. M., M.D., Professor of Otology in Cornell University Medical College, New York. With an Introductory Chapter by CLARENCE J. BLAKE, M.D., Professor of Otology in the Harvard Medical School, Boston. Philadelphia and New York: Lea Brothers & Co., 1898.

WHILE not replacing any of the standard references Dr. Bacon's little book condenses into a convenient guide the essential facts of modern otology. The style is terse and readable and leaves nothing for the student to imagine. Diagnosis and treatment especially are made clear without the omission of important details.

The chapter on mastoid diseases, however, is somewhat disappointing in its brevity and the description of the surgery of mastoid complications is incommensurate with the importance of the subject. The work is freely illustrated.

PATHOLOGY AND MORBID ANATOMY. By T. HENRY GREEN, M.D., Lecturer on Pathology and Morbid Anatomy at Charing-Cross Hospital Medical School, London. New (8th) American, from the eighth and revised English, edition. Philadelphia and New York: Lea Brothers & Co., 1898.

THAT this work should have passed through eight English, and as many American editions, is ample testimony of its continued recognition as a standard text-book. Dr. Walton Martin, who revised this last edition, has effected a noticeable improvement in the arrangement of the subject material. By adopting a different system of classification he has made the text more convenient for reference, and more logical for order of reading. While the work is free from lengthy discussions and from descriptions of experiments due note is made of recently derived data in pathology and of the most modern theories in cytology and bacteriology. The book is handsomely illustrated.

A TEXT-BOOK UPON THE PATHOGENIC BACTERIA. For Students of Medicine and Physicians. By JOSEPH MCFARLAND, M.D., Professor of Pathology in the Medico-Chirurgical College, Philadelphia; Pathologist to the Medico-Chirurgical Hospital and to the Rush Hospital for Consumption and Allied Diseases, Philadelphia. Second Edition, Revised and enlarged. Philadelphia: W. B. Saunders, 1898.

THIS is an admirable book in many respects, and physicians in particular will find much of interest in it. As a text-book for students, however, there is much that could have been omitted. In the preface we are informed that "the work being upon pathogenic bacteria, it does not cover the whole scope of parasitology, and the parasites of higher orders are all omitted. Malaria and amebic dysentery are omitted as logically as tapeworms and pediculi." Still we find several pages describing in detail the disinfection of the hands in surgical procedures and the preparation of ligatures, the disinfection of sick-rooms, the disposal of dejections and sputum, and the care of patients during convalescence from infectious diseases, all of which may be found in any modern work on medicine or surgery and does not logically find a place in the work before us.

The book contains a vast amount of information on the subject of bacteriology and the matter is presented in a

clear and pleasant style. All of the most recent discoveries and works in the field find mention in the present edition, the references to the original sources being of great value. The author describes at length the serum reaction in typhoid fever, giving preference to fresh agar-agar cultures distributed in sterile water to bouillon cultures, and also recommends the use of capillary tubes for the accurate dilution of the blood.

There are so many practical suggestions throughout the book that it cannot but prove of great value to all workers in bacteriology and to those interested we cordially commend it as thoroughly reliable and accurate. The paper, illustrations, and book-making are of the highest order and leave nothing to be desired.

THE ESSENTIALS OF HISTOLOGY, DESCRIPTIVE AND PRACTICAL. For the Use of Students. By E. A. SCHAFER, LL.D., F.R.S., Jodrell Professor of Physiology in University College, London; Editor of the Histological Portion of Quain's "Anatomy." New (fifth) Edition, Revised and enlarged. Philadelphia and New York: Lea Brothers & Co., 1898.

AN extended review of this book, so well known to students, would indeed seem superfluous. In the present edition much has been added, particularly in the chapter on the nervous system, and the whole work has been brought so well up to date that as a text-book for the student it leaves nothing to be desired. The general plan and arrangement are identical with previous editions, the beautifully executed illustrations being especially valuable and instructive.

We have only one suggestion to offer: that in the appendix a more detailed explanation in the technic of preparing histologic specimens would greatly enhance the value of the book. With this exception the work stands at the head of its kind and no student will regret having it in his possession.

THE OHIO STATE MEDICAL SOCIETY. Transactions of the Fifty-third Annual Meeting, held at Columbus, Ohio, May, 1898. Cleveland, Ohio: J. B. Savage Press, 1898.

A HANDSOME portrait of the president, Dr. William H. Humiston, is the frontispiece of this volume. The editor, Dr. P. Max Foshay, has given us a rather unique book, in that the papers read at the meeting are grouped under the respective heads to which they belong. The articles are up to the usual high standard of this society and the volume will be a pleasant memento of what must have been an interesting meeting.

YELLOW FEVER—CLINICAL NOTES. By JUST TONATRE, M.D. (Paris). Translated from the French by CHARLES CHASSAIGNAC, M.D. New Orleans: New Orleans Medical and Surgical Journal, 1898.

THIS book is the result of the author's experience gained in the treatment of more than two thousand yellow-fever patients. It considers the subject chiefly from a clinical standpoint. As such it is very valuable, because the descriptions of this disease in the various text-books are not often based on personal experience. The author calls special attention to Faget's law of divergence between pulse and temperature, and to the same physician's observation of the fall of pulse-rate in this disease. He regards these two symptoms as pathognomonic of yellow fever, yet he says they are very little known, imperfectly observed, and badly appreciated.

Dr. Tonatre considers that the question of temperature in yellow fever regulates everything,—the diagnosis, the prognosis, and the treatment. He is not at all modest in reference to his own skill and knowledge of the disease, and does not hesitate to affirm them whenever he can.

RECORDS OF URINARY EXAMINATIONS. A Convenient Method for Keeping Records of Urinary Examinations for Future Reference in Hospital or General Practice. Arranged by HARRY MORELL, M.D. Hartford: J. B. Burr & Company, 1898.

THIS volume consists of a large number of alternate white and yellow blanks for urinary reports, arranged so that by means of carbon paper, two records can be simultaneously made. The white sheets are detachable, so that a copy of the results of an examination can be given to the sender of the specimen. On each page is a list of the ingredients to be tested for, with space at the side for the filling in of the results. Hippuric acid, creatinin, xanthin bases, and coloring matters need scarcely to have been taken in account, as they are not usually tested for in clinical examinations. Diacetic acid might have been added. Space is provided for an index. The book is bound in oiled cloth so as to be easily cleansed after use in the laboratory.

THERAPEUTIC HINTS.

For the Constipation Accompanying Ovaritis.—

℞ Sodii sulphatis, Sulphuris, Sacchari } aa 3vi
Spts. menthæ pip. . . . . q.s.

M. Sig. One teaspoonful in a glass of water at bedtime.—*Winternitz.*

For Pertussis.—

℞ Tinct. digitalis . . . . . *m.* xv
Antipyrin . . . . . gr. xxx
Tinct. opii camphoratæ . . . . ʒi
Syr. tolutani . . . . . ʒii.

M. Sig. One-half teaspoonful three times a day.—*Koplik.*

For the Dysphagia of Tubercular Laryngitis.—KASSEL claims for this symptom an efficient remedy in an emulsion of one part orthoform in four parts olive oil to be injected directly into the larynx by means of a suitable syringe. Orthoform when thus applied does not provoke the violent fit of coughing which follows insufflation of the drug, and its full analgesic action is therefore gained. After a momentary burning sensation there comes a feeling as of a foreign body in the larynx which marks the beginning of an analgesia lasting often for twenty-four hours. No effect on the lesion is obtained but the secretion of the ulcerated parts is noticeably diminished.